

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2504.—Vol. LIII.

LONDON, SATURDAY, AUGUST 18, 1883.

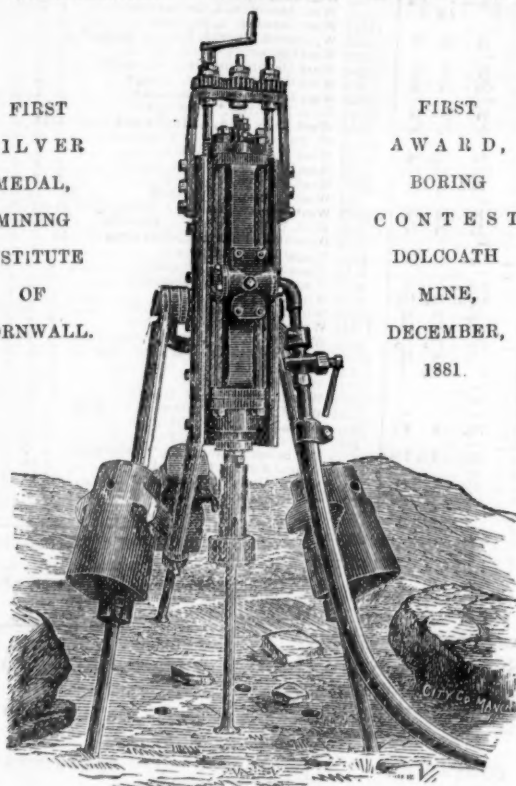
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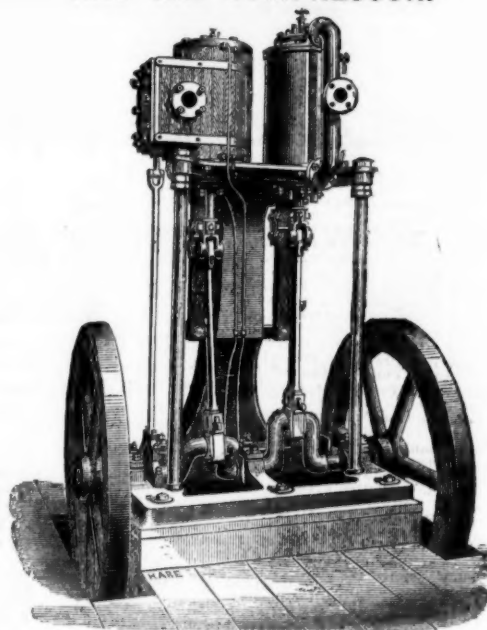
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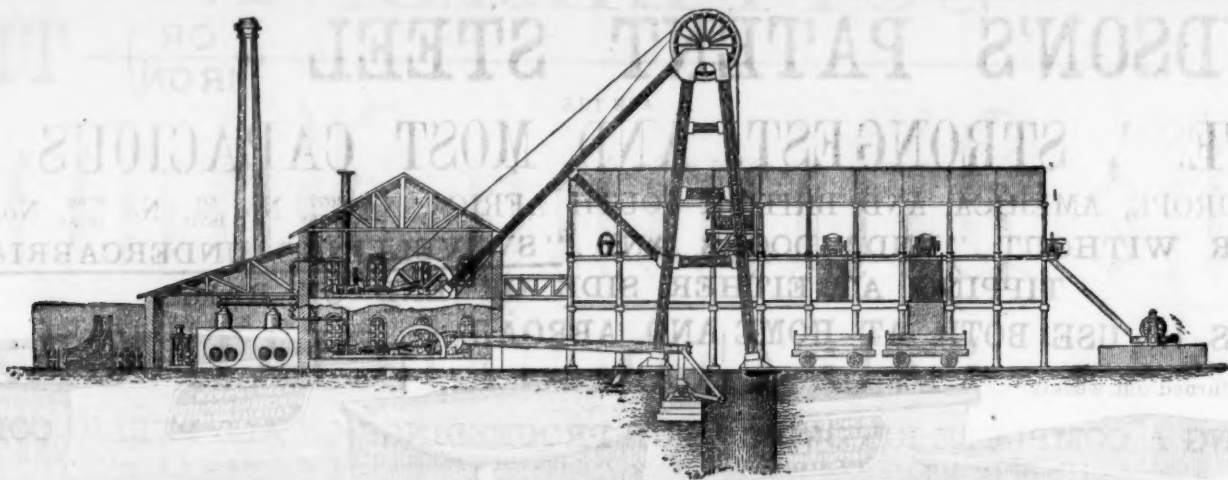
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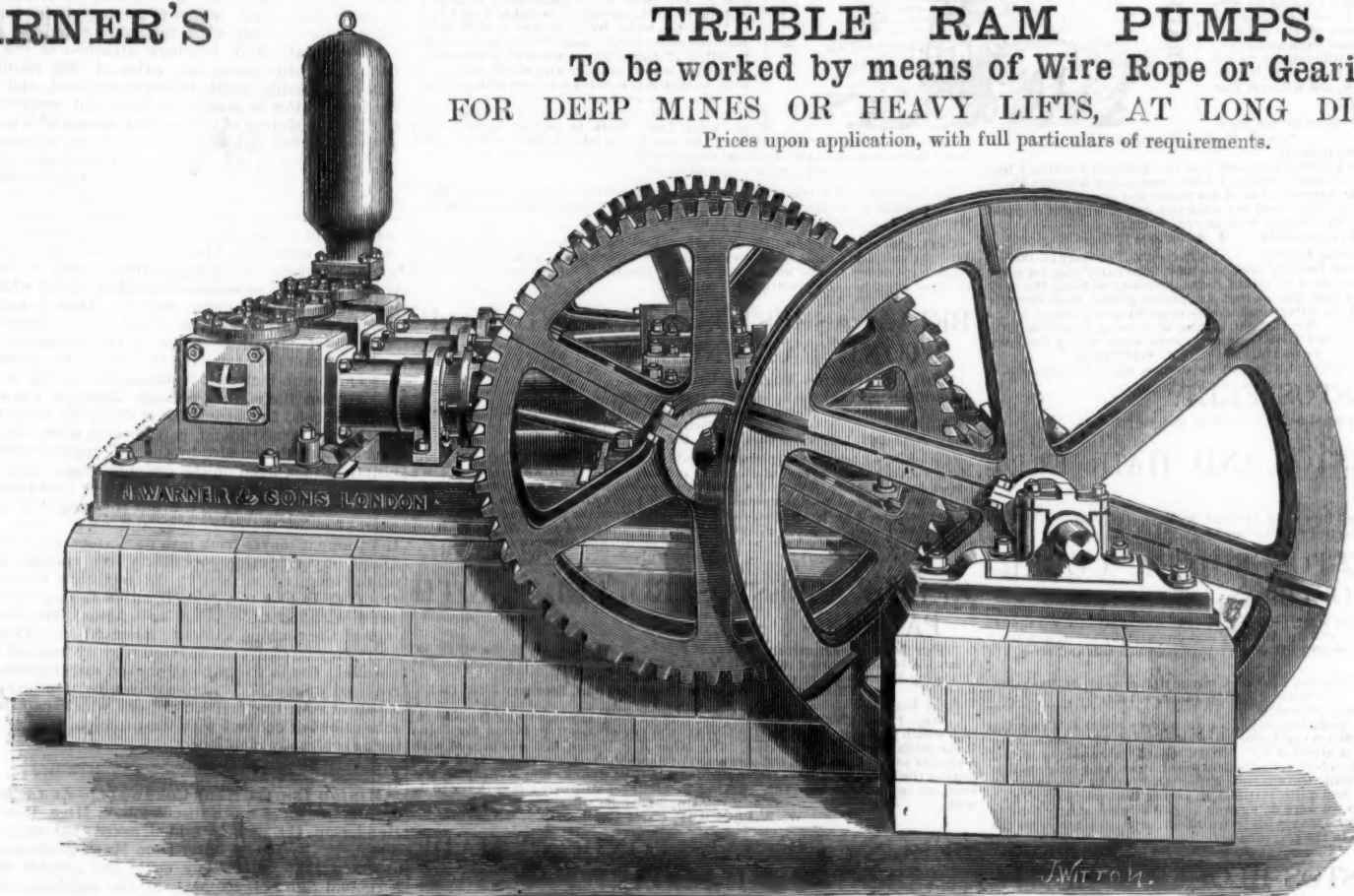
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FOR DEEP MINES OR HEAVY LIFTS, AT LONG DISTANCES.
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This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.

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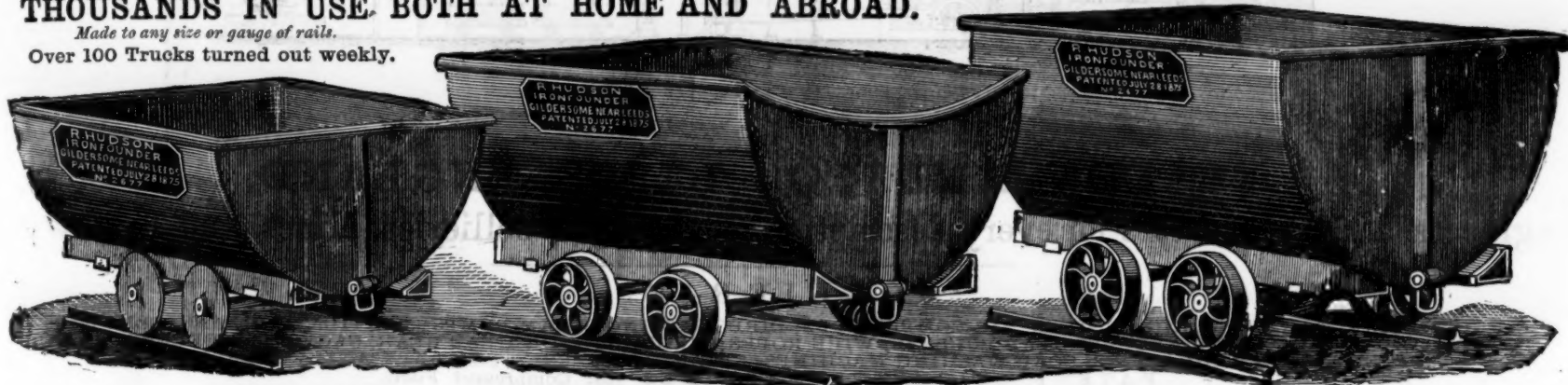
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This is the best and most economical Piston Packing in the market for High and Low Pressure Stationary Engines. Of course there are many worthless imitations of a Packing so universally approved of, but I am the Original Maker and Sole Manufacturer of the genuine article, as used in the British and German Navies. To avoid imposition, users should require to see my Trade Mark, which is on every 10 ft. length of the Packing made by me, and without this none is genuine.

The following Testimonials refers to this Packing:—

Mr. J. Bell, Asbestos Works, London. Sewage Works, Winchester, Jan. 12, 1883.
DEAR SIR,—I have great pleasure in saying that the Asbestos Packing I had from you is the best I have ever used, though I have used other Asbestos Packings not of your make. As an example, one of my piston rod glands was packed with it, and has been working night and day since October 25 without re-packing. I have not been able to run so long with any other make.

I am, Sir, yours truly, J. ASHCROFT, Chief Engineer.
Mr. John Bell, Asbestos Works, London. Portsmouth, February 20, 1883.
SIR,—Your Asbestos Steam Packing that you have been supplying for some considerable time I can recommend to steam users generally as being the very best that was ever introduced into the market for piston glands, slide throttle and throttle valve glands. I can after considerable experience say that it is the very best that I have ever used. We run our engine at between 80 and 90 revolutions per minute, and I may add that there is no work more trying than saw mill work.

Yours truly, WM. HATCHER,
Engineer at Bailey's Steam Saw Mills, Portsmouth.
BELL'S ASBESTOS FELT,
A cheap material to be placed between ceiling and upper floor, to prevent spread of fire.

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For Hot Water and Steam Pipes, to Prevent Radiation and Ensure Transmission of Heat; also to Protect from Frost.

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For Coating the Boilers of every kind of Marine and Stationary Engine. It is non-combustible, and can be easily and quickly applied at any time whether steam is up or not. It adheres to iron and metals and preserves them from rust.

The Maxim Weston Electric Company (Limited), 29, Bankside, London, S.E., 4th January, 1883.
Mr. John Bell, 118, Southwark Street, S.E.
DEAR SIR,—In answer to your request, I beg to inform you that I find the thermometer placed 3 feet above the boilers now stands at 93°; before your covering was put on it used to stand at 126°. With regard to the saving in fuel I am unable to speak very accurately, as the boilers were not working long enough before being covered to ascertain the amount of fuel that would be consumed in an ordinary run; but I feel quite justified in saying that we burn less by about 5 cwt. per night than we were doing, and I shall be glad at any time to show the boilers to any one who may wish to see them, as I consider yours the best covering that I have up to the present seen.

Yours faithfully, (Signed) J. H. CUNDALL, Works Manager.
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BELL'S ASBESTOS AND INDIAN RUBBER WOVEN TAPE.

It has been found very efficient for making bludge-pipe joints. It can be bent by hand, without puckering, to the form required, and is especially useful in making manhole and mud-hole doors; also for large "still" joints where boiling fat and acids of a kind have to be resisted. For these latter purpose it is kept in rolls of 100 feet, in various widths from 1 inch to 2½ inches wide, by ¼ inch to ¾ inch thick. Manhole cover joints made of this material can be lifted 20 times before renewal is necessary. This Tape is also made in any width and thickness, so that it is suitable for every class of joint. It is also made in sheets about 40 inches square, from ¼ inch thick upwards, and each sheet bears my Trade Mark to protect users against imitations. Every 10 feet length of the tape has a label attached bearing my Trade Mark, and users are earnestly requested to see that this label is attached, to prevent imposition by worthless imitations.

The engineer of a world-renowned firm writes:—"There is not, nor can there be, any doubt as to the excellence of your Asbestos and Indianrubber Woven Sheet—as a jointing material it is unrivalled."

The engineer of a large colliery writes:—"I would in all candour say that your Asbestos and Indianrubber Woven Sheet is first-rate for joints. In my 25 years' experience I have not seen anything like it. I highly recommend it to all those who have to do with steam engines."

BELL'S ASBESTOS YARN AND SOAPSTONE PACKING.

For Locomotive Engines, Cranes, &c.
The following Testimonial refers to this Packing:—
Festiniog Railway, Locomotive Superintendent's Office, Portmadoc, Jan. 13th, 1883.

Mr. John Bell, 118, Southwark-street, S.E.
DEAR SIR,—I have much pleasure in saying that the Asbestos Yarn and Soapstone Packing gives every satisfaction; indeed, better than we expected. We have a locomotive packed with it, and has been running five months (and think of the piston speed with our small wheels). I think the Soapstone a great improvement, as it keeps the packing elastic, and prevents it getting hard. I am very pleased with its working, and also the very low price for such good lasting packing. The Asbestos Yarn we find is very useful, and answers admirably.
(Signed) Yours truly, W. WILLIAMS.

BELL'S ASBESTOS ROLLED CLOTH PACKING.

For Marine Engines. Every 10 feet length of the above Packings has a label attached bearing my Trade Mark, without which none is genuine. The following Testimonial refers to the Asbestos Cloth Packing:—
S.S. "NORFOLK," S.W. India Docks, London, February 28th, 1882.

John Bell, Esq.
SIR,—I have great pleasure in reporting on your Asbestos Cloth Rope Packing which you sent me on trial. I tried it in one of two H.P. Piston Rods, and it ran 90 days without repacking. The other H.P. Piston Rod was packed with a similar form of packing, not composed of Asbestos, and was repacked 10 times during the 90 days. I have recommended it both at Sydney and Melbourne, and shall do my best to take this packing in whatever steamers I may have to do with.
I remain, Sir, yours truly,
W. W. PROPHET, Chief Engineer S.S. "NORFOLK."

BELL'S SPECIAL LONDON - MADE ASBESTOS MILLBOARD.

For Dry Steam Joints, Electric Dynamo Machines, &c.; made in sheets measuring about 40 inches square, from 1-64th inch to 1 inch, and ¼ millimetre to 25 millimetres thick. Each sheet bears my Trade Mark, without which none is genuine.

BELL'S ASBESTOS CORDAGE.

For Fire Escapes and Window Sash Lines, &c.

APPLYING MOTIVE-POWER TO TRAMCARS.

An improvement which relates principally to the construction of apparatus for applying the motive-power of a gas-engine to propel a tramway car of that class wherein the body of the car is mounted upon a central stud or pivot, so that when arrived at its journey's end it can be turned round end for end, before commencing the journey in the opposite direction, the under carriage and wheels retaining their position on the track, has been invented by Mr. W. H. HINDLE, of Blackburn. At the front end of the body of the carriage is fixed a small engine shed carrying the gas-engine (which he prefers to be of the vertical type) having at the top a gas reservoir, and at the other end of the body is the platform for the entrance and exits of the passengers. On the axis of the gas-engine is keyed a driving pulley which by means of a band, chain, or frictional gearing drives a loose pulley on a short driving shaft supported in bearings below the foot-plate of the engine and in a line with a similar shaft carried in bearings attached to the under carriage or frame, slightly above the axles of the running wheels. Upon the short driving shaft before-mentioned, and in connection with the loose pulley is mounted a frictional reversing gear so arranged that by the sliding of a clutch by means of a lever, the loose pulley is either locked fast with the short shaft, or caused to drive a second friction plate and turn the shaft in the reverse direction. By moving this handle, therefore, to the right or left the shaft will be driven in the required direction without reversing the gas-engine. The inner end of the driving shaft is fitted with a sliding clutch, which can be moved into or out of gear with a corresponding clutch, one of which is fixed at each end of the longitudinal shaft carried by the frame or under carriage. This longitudinal shaft is fitted with two quick threaded worms or screws driving two worm wheels, one fitted on to each axle of the running wheels. Thus it will be seen that when the clutches are in gear at either end of longitudinal shaft all four running wheels will be driven by the gas-engine.

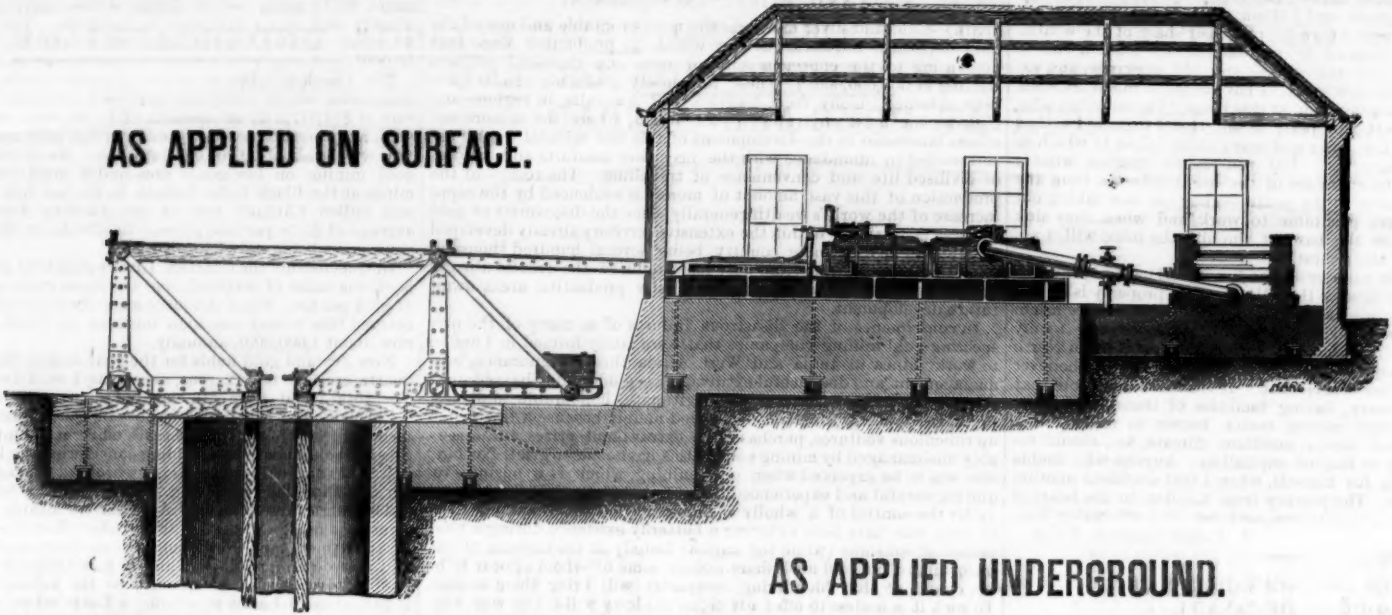
The advantage of driving the wheels by screw gearing is that in descending an incline it is impossible for the weight of the carriage to over-run the engine, because although the screws will drive the worm wheels, the latter cannot drive the former. The body of the carriage is turned round, end for end, when required by means of a spur pinion (driven also by the gas-engine) acting in gear with an elliptical rack fixed on the under carriage, and so arranged that as the body is turned across the frame or under carriage, the former is moved endwise so as to prevent the weight of the gas-engine from overbalancing the other end, and as it comes again into line with the frame it moves back into its former position so as to bring the clutch of the friction gear nearly into contact with that on the end of the longitudinal shaft. To facilitate turning round curves, or from one line on to a branch, either to the right or left, and to dispense with loose tongues or switches on the rails or track, the bearings of the running axles are mounted in curved slides, so that the axles may be made to converge slightly instead of being absolutely parallel; the bearings being moved either forwards or backwards as required by means of screws driven by toothed gearing actuated by a pair of reversing friction pulleys which can be moved by a lever into or out of contact with the principal friction plate of the reversing gear already mentioned.

MINING INSTITUTE OF CORNWALL.—At the meeting of members on Aug. 10 there was a discussion on Mine Dues and Leases. Mr. Henderson, C.E., who presided, asked that some resolution might be adopted. He read a letter from Mr. Hutchinson, of Camborne, who observed that unless they could get greater security of tenure, a perpetual right of renewal, or the purchase of the freehold, they would not get people outside Cornwall to invest.—Mr. R. Symons, Truro, thought the fine of 25,000l. for the renewal of Dolcoath lease was an innovation and deserving of condemnation. The general impression was that Mr. Basset's agent inspired him in the matter.—The Chairman said that such an impression was unwarrantable. He wished someone duly qualified had been present to tell them where to begin in dealing with this question. A great cause for their present position was that men who had no interest in legitimate mining obtained leases, and sold them to a company at a great profit.—Mr. Symons thought the Government should prevent conveyancing charges being so heavy as now.—The Chairman said they were not there to discuss that subject.—Mr. Symons said the only equitable mode was to pay dues out of profits.—The Chairman agreed, but how was it to be done?—Mr. Symons: Bring in a Bill.—Mr. Bain referred to the fact that no practical suggestion had yet been made, and after some further discussion, during which the Chairman mentioned that Mr. Collings, M.P., and Mr. Cowen, M.P., were willing to help on ameliorative legislation in order to see if something might not be done, the matter was referred back to the Council, in order to see if something might not be done. In the motion was incorporated the offer of Mr. Symons to draft a Bill, which would be submitted to the Council. Messrs. Bain and Abbot were added to the Council.

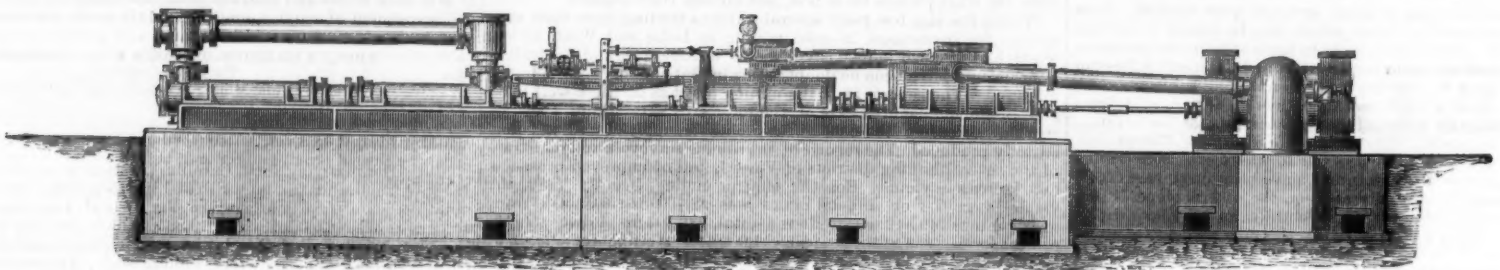
A NEW EXPLOSIVE.—M. Eugène Tupin, a French chemist, has discovered an explosive of tremendous power which he terms "Pancastite," and for which he claims a maximum of force with a minimum of risk, the two materials of which it is composed being innocuous until mixed. M. Turpin recently made experiments at Chatham before the military authorities, and they pronounced the explosive to be very satisfactory.

HATHORN, DAVEY & CO., LEEDS. THE DIFFERENTIAL PUMPING ENGINE.

AS APPLIED ON SURFACE.



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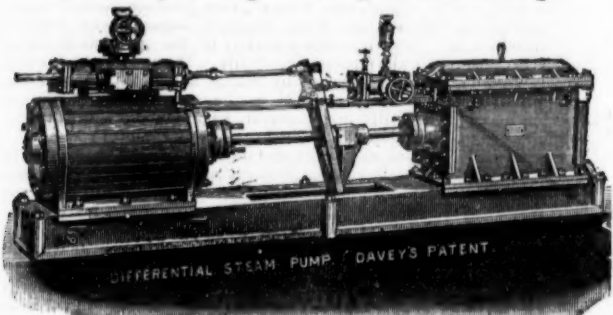


MINING MACHINERY OF ALL KINDS.

Hydraulic Pumping Engines and Hydraulic Machinery of all kinds.

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The only Self-governing Steam Pump.

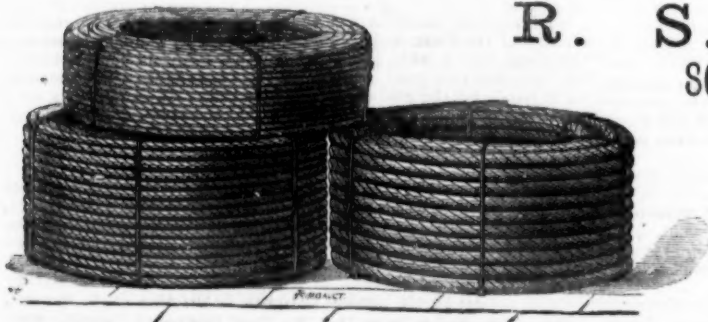


See Reduced Price List.

PRICE LIST.

Diameter of Steam Cylinder. Inches.	Diameter of Water Cylinder. Inches.	Length of stroke. Inches.	Gallons per Hour.	Height to which water can be raised with 40 lbs. steam pressure. Feet.	PRICE. £	Price with Condenser, in Suction Pipe. £	Price with Air Pump Condenser. £	Diameter of Suction and Delivery Pipes. Inches.	Diam. of Steam Pipe. Inches.	Diameter of Exhaust Pipe. Inches.
10	5	15	5,200	250	65	72	85	5 1/2	1 1/2	2 1/2
10	7	15	10,400	130	70	80	100	6	1 1/2	2 1/2
10	9	15	17,300	70	85	100	120	4 1/2	1 1/2	2 1/2
12	6	24	6,500	250	90	104	130	5 1/2	2	2 1/2
12	7	24	10,500	180	96	110	136	6	2	2 1/2
12	8	24	13,500	140	100	114	142	7	2	2 1/2
12	10	24	21,300	90	120	136	175	5 1/2	2	2 1/2
14	7	24	10,400	250	110	130	156	6 1/2	2 1/2	3
14	8	24	13,500	190	120	145	165	6	2 1/2	3
14	9	24	17,300	150	130	150	172	7	2 1/2	3
14	10	24	21,300	120	140	162	190	7 1/2	2 1/2	3
14	12	24	30,800	80	160	190	216	9	2 1/2	3 1/2
16	8	24	13,700	250	140	170	195	6	3	3 1/2
16	9	24	17,300	200	150	180	215	6 1/2	3	3 1/2
16	10	24	21,300	160	160	196	225	7 1/2	3	3 1/2
16	12	24	30,800	110	180	220	246	9	3	3 1/2
16	14	24	42,000	80	200	242	264	10 1/2	3	3 1/2

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Iron and Steel Ropes of the highest quality for Collieries, Railways
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IRON STEEL, AND COPPER CORDS.

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United States Mineral Surveyor for Utah and Idaho, Notary Public, Geological
Examinations, Reports on Mining Properties; Surveys Mines, Railroads, and
Canals, and Superintends the Workings of the same. Prepares Estimates and
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Original Correspondence.

COPPER MINING IN THE UNITED STATES.

SIR,—Perhaps some of your numerous readers may like to hear the contents of a letter which I have just received from North Carolina, United States. My correspondent is manager and part owner of a large copper property recently discovered, about 12 miles from Thomasville, Davidson County, North Carolina, known as the Cid Mine. He briefly mentions that—"the Cid Mine is now in a large body of ores of best grade, and I think of such quantity that my associates will hardly know where to put their share of the wealth. On Saturday last, accompanied by my daughters, I made a visit to Hoover Hill. We explored the tunnel and old workings, and examined the ores from the new shaft. I have heard so much criticism from the experienced mining men at this place (Thomasville) who, of course, have much better property to sell, that I expected to find Hoover Hill similar to the Lalor and many other mines in which so many thousands have been lost. But you cannot imagine what a surprise it gave me. The character of the ore is different from any property I have so far seen in the south. They are now taking out ores that undoubtedly are profitable to work, and when they sink deep enough to be below the base of the hill, the mine will, I am confident, prove one of the richest."

I will add that neither this gentleman nor myself have any interest direct or indirect in the Hoover Hill Mine. This property is owned by an English company, who, although they paid far too large a sum for it, have a good mine, and one that will pay, according to my friend. I have spent several months during the last year in North Carolina, and from being a sceptic I have become a staunch believer in the marvellous richness of this State. It is almost incredible that such a vast mineral country, having facilities of transport far exceeding those of any other mining region known to me, together with cheap and efficient labour, excellent climate, &c., should to-day be almost unknown to English capitalists. Anyone who doubts this should go and see for himself, when I feel confident another convert would be made. The journey from London to the heart of this mining district is a pleasant one, and can be comfortably done in 11 days.

M. PARRY GOSSET, F.C.S.

Old Broad-street, Aug. 16.

TO ENGLISHMEN AND ANGLO-CANADIANS—THE MINERAL RESOURCES OF CANADA.

SIR,—As this subject may interest many of your readers, I have forwarded you some practical hints, which may be turned to suit the requirements of the present time, so as to hasten the development of what may be the most valuable portion of Canada, and which has not been especially named by previous writers on mining subjects. You will see by the enclosed complimentary article of April 6, 1878, from the Mining and Scientific Press, of San Francisco, that the opinions expressed in my *Explorers', Miners', and Metallurgists' Companion*, published so far back as the year 1869, as to where extensive mining fields would be found on this Continent, have been in all cases fully realised in and across the United States on the several slopes of the northerly trending mountains and their foothills, as therein more particularly named. The chief reasons for this communication are to show, so far as proved in the United States, even up to points very near its northern boundary, that these predictions have been practically demonstrated by innumerable operations and very large profits; and, secondly, to repeat the statements and call renewed attention to the established facts that the same mountain ranges will carry similarly favourable analogy northward in their courses through British possessions.

The Americans are the best prospectors for mineral in the world, and have during the period named above performed an amazing amount of exploration work, and made many valuable discoveries. The transcontinental railway of Canada will enter into and out its way across—or in a mining manner, coastwise—the whole mountainous portions of the country, and will soon enter the wide and most interesting mineral zones of the Rocky and Wasatch Mountains, where intelligent observation and explorations will, in my opinion, cause Old England to be once more proud of Colonial wealth.

This field for mining, with mountains running over 1000 miles northerly, the whole breadth of the Canadas, will probably extend across the longitudes of Western Dakota, Montana, and Idaho, of the United States of America, but for lode or vein mining will not reach so far west as Cariboo in British Columbia, as the Sierra Nevada chain of mountains is thereabout broken and detached for a few hundred latitudinal miles. This does not prevent the possibility of auriferous discoveries in gravel formations, which are very likely to be found in many valleys that have received the water-washed auriferous debris from the western declivity of the previously named mountains along the route. I have been frequently questioned by letters from England: Where is the best place to explore for minerals? And I answered both English and Canadians—Prospect the breadth of the Canadas on either side of this advancing railway, but more particularly opposite to Western Dakota, Montana, and Idaho, for vein mining, and thence westward for gravel and placer gold, where vast mineral areas lie unexplored.

When this railway is sufficiently far advanced the north and south branches of the Saskatchewan river, the Athabasca, and Peace rivers, and the Rivers Liard, Peel, and McKenzie will be found also convenient for both prospecting and power for mining this 1000 miles long of the east slope of the Rocky Mountains, whilst the five branches forming the head waters of the great Yukon river may be utilised for the north-western slope and the more eastern spurs and parallel range. A few brave and strong men may make immense fortunes along this range of mineral-bearing strata. I know of no other unexplored belt in North America that exposes superior inducements, and there is probably nothing on this continent but the unexplored eastern slope of the mighty Andes, which extends 4000 miles from north to south through the several rich countries of Colombia, Ecuador, Peru, Bolivia, the Argentine Republic, and Patagonia; but Canada has the great advantages of your own language and flag, whilst these are mostly inaccessible, and more particularly so to foreigners.

I have not the slightest interest in this matter beyond goodwill for my countrymen, but having during the last 18 years travelled over North America, and studied its mineral formations as much as but few men, and feeling certain that this region will be found valuable, I perform the pleasant duty of publication.

There are, says the author, in the countries lying west of the Mississippi, four extensive mineral-bearing regions that strongly invite the prospector for gold and silver. The first of these begins in the Guadalupe and Sierra Madre Mountains in Mexico, and passes north-westerly, embracing in its course the Chiricahui, Catarinas, Maggolino, and Pinal ranges of mountains in Arizona. Many facts on record in the City of Mexico, as well as the ancient excavations and other mining relics found in this section, demonstrate it to have been rich in mineral wealth, the hostility of the Indian tribes who inhabit it having prevented the modern explorer from entering it. The second of these broad mineral-bearing zones consists of the Sierra Nevada range, which, commencing in the south-western part of California, extends thence in a north-westerly course some 500 or 600 miles, uplifting on the California side the talouse clay-slates, and on its easterly flank patches of clay-slate, lime, &c. For the westerly slopes of the Sierra Nevada our author foretells an active and prosperous mining future, its accessible position, abundant supply of wood and water and other favourable conditions placing it in the front rank as a mining region. When the desire of our prospectors to visit the remote and little-known interior shall have abated, when wages and interest upon money shall be cheaper, and many of the mistakes and abuses now prevalent in mining shall have been corrected, the mineral resources of this belt will receive the attention they deserve, and mining be pursued here with economy and profit. When that day arrives, adds the writer, the reduction of auriferous quartz will be carried on here as cheaply as in Brazil, Australia, or New Zealand, and scores of ledges will be worked where there is now but one, while the discovery of new lodes will be numbered by the thousands.

And not only within the limits of California will this range prove a broad and profitable field for mining enterprise. After it has left this State, and passing on north through Oregon, Washington Territory, and British Columbia, till it enters the realm of perpetual snow it will maintain this character. When these northern countries shall become more thickly populated, and the dense forest shall be cleared off, affording better chances for examining their geological formation, we may look for a rapid extension of the gold and silver mining industry in that direction. The third field indicated by Mr. Phillips as likely to receive attention and reward investment, consists of the Wasatch mountains, with their outlying ranges, which possess all the advantages of the various granitic and the older secondary formations. In some parts these mountains will be favourable for the production of the precious and in others of the base minerals, it being also probable that moderately thick deposits of coal and iron

will be found in the central basins lying between these and the Rocky Mountains. The fourth field in this chapter pointed out comprises the Rocky Mountains, trending north through New Mexico, Colorado, Wyoming, and thence on into the British possessions. The easterly slopes of this range, facing vast plains formed by the alluvials of all ages, will present constant variations, rendering it probable that the metallic minerals will be found along them only at long intervals, accordingly as local strata may encourage their presence. Heavy and frequent beds of coal may also be looked for at variable distances towards the east and at points remote from metamorphic action.

State-street, New York, Aug. 4.

J. S. PHILLIPS.

THE ANGLO-AMERICAN AND AUSTRALASIAN MINING, LAND, AND FINANCE AGENCY.

SIR,—Gold and silver mining is the most profitable and one of the most important industries of the world, its production since 1848 amounting to the enormous sum of over one thousand millions sterling (1,000,000,000). These immensely profitable results have been obtained chiefly from America and Australia, in regions and climates the most enjoyable in the world, where the miners and others interested in the development of this vast mineral wealth are surrounded in abundance with the necessary comforts and luxuries of civilised life and convenience of travelling. The results of the production of this vast amount of money is evidenced by the rapid increase of the world's wealth generally since the discoveries of gold in these countries. Within the extensive territory already developed as gold and silver mining country, being several hundred thousand square miles, a small portion only has produced the results already known, while large and probably equally productive areas await future development.

In consequence of the disastrous failures of so many of the prospecting gold mining companies that were lately formed in London to work mines in India and West Africa, through ignorance, mismanagement, and disgraceful extravagance, gold mining has obtained a reputation it does not deserve. A legitimate, honourable, and most profitable industry must not be decried merely because a few puffed up ridiculous ventures, purchased at extravagant prices and miserably mis-managed by mining nonentities, have come to grief. Nothing else was to be expected when gold mining, which is a business requiring careful and experienced direction, got into the hands of and under the control of a wholly inexperienced and incompetent class of men, who have been enjoying a butterfly existence during a brief period of sunshine (while the capital lasted) at the expense of the unfortunate but deluded shareholders, some of whom appear to be yet confident that blundering incapacity will bring them success. To such it is useless to offer advice, as shadowy will-o'-the-wisp ventures are what pleases them best, and obtains their support.

Within the last few years several millions sterling have been subscribed for investment in gold mining in India and West Africa, which had it been judiciously invested in American and Australian mines would have been no doubt returning satisfactory results to the investors. The reports from the mining districts of these well-tried gold-producing countries are of the most satisfactory kind, showing that an increasing and continuous profitable supply of gold is being steadily produced. The reports of the mining surveyors and registrars of the several mining districts of Victoria tell of improved prospects and increased yields. For the quarter ending Dec. 31, 1882, the yields of gold from alluvial mines was 92,760 ozs. 8 dwts.; from quartz mines 149,542 ozs. 13 dwts.; total, 236,303 ozs. 1 dwts. Value at 80s. per oz., 935,212*l.*, or nearly 4,000,000*l.* sterling for the year, and adding the yields from New South Wales, Queensland, New Zealand, Tasmania, and the Northern Territory will now bring the yield up to about 7,000,000*l.*

The following returns from mining districts in the colony of Victoria are here given:—

Mining Districts.	Quantity crushed.			Average yield of gold per ton.			Total Yield of Gold from Quartz &c., Crushed.		
	Tons.	dwts.	grs.	Ozs.	dwts.	grs.	Ozs.	dwts.	grs.
Ballarat	120,146	0	0	0	6	10	35,554	10	5
Beechworth	10,911	0	0	0	11	23	6,541	9	13
Sandhurst	71,568	0	0	0	13	19	49,487	13	23
Maryborough	13,464	9	0	0	9	10	6,360	3	13
Castlemaine	29,058	0	0	0	7	20	11,399	1	12
Ararat	15,684	0	0	0	5	13	4,361	15	22
Gippsland	8,226	0	0	1	10	16	12,625	4	18

Totals	269,057	9	0	0	9	14	129,409	19	10
Quartz tailings and mullock	3,209	10	0	0	2	1	329	11	1
Pyrites and blanketings operated on	1,994	18	0	0	2	4	4,406	17	16

NOTE.—This summary does not show the total quantities of quartz, &c., crushed or operated on, but only the yields respecting which information could be obtained.

The returns from a few alluvial mines in the Creswick sub-division of the Ballarat district are as follows:—

Name of Company.	Yields.			Dividends and Royalties.		
	Ozs.	dwts.	grs.	Ozs.	dwts.	grs.
Ristori Company, Spring Hill	9,529	11	0	£32,942	1	6
Dykes Freehold Co., Spring Hill	2,233	5	0	5,220	9	7
Madame Berry Co., Spring Hill	7,569	10	0	18,550	16	1
Ione Hand Co., Spring Hill	3,891	12	0	7,509	15	6
Loughlin Co., Spring Hill	4,549	6	0	7,103	10	6
New Australasian Company	2,962	14	0	5,000	0	0
From small claims	700	0	0	—	—	—

Total

31,435	18	0	—	£76,326	13	2
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The Black Horse United Company, Egerton.—This company have raised during the quarter 8465 tons of stone, from depths ranging from 400 to 900 ft., which yielded 1521 ozs. 8 dwts. 2 grs. of gold, or an average of 3 dwts. 4-27 grs. per ton. In addition to this a large amount of prospecting has been done at the various levels throughout the mine, in order that the company may be in a position to preserve the uniformity of the yields; 95 men are still employed, and three dividends of 1*s.* each, equal to an amount of 1500*l.*, have been paid, being at the rate of about 50 per cent. on the capital.

The Egerton Company (adjoining the above).—Prospecting operations have been resumed during the quarter by this company at the Sister Rose shaft, in addition to which 16,762 tons of stone have been raised and crushed, yielding 4800 ozs. 15 dwts. gold, or an average of 5 dwts. 17-47 grs. per ton. Dividends amounting to 8*s.* 6*d.* per share, equivalent to the sum of 10,625*l.*, have been paid during the quarter, and 250 men employed.

Gippsland: Stringer's Creek Division.—The Mining Registrar reports as follows:—Quartz mining continues to be prosperous. There has been no particularly important new discovery during the quarter, but the progressive improvement continues, and I do not think I can give an idea of this improvement in a more concise form than by republishing the following table of total quarterly returns for 1882:—

Tons crushed.	Gross yield.			Yield per ton.		
	Ozs.	dwts.	grs.	Ozs.	dwts.	grs.
March, 1882	5350	4578	6	0	17	2
June	6103	5558	6	0	18	5
September	6784	8566	15	0	1	5
December	5846	9710	11	0	1	13

This statement does not include gold obtained from either pyrites or quartz tailings.

It may be interesting to republish the returns for the year 1882 from the Long Tunnel Extended Company's Mine. Again premising that before the company could get out the first crushing they had to carry on continuous work for about six years, and nearly 50,000*l.* was spent on the mine and machinery before it became remunerative:—

Quarter ending.	Gross yield.			Yield per ton.		
	Tons crushed.	Ozs.	dwts.	Ozs.	dwts.	grs.
March, 1882	608	305	1	0	10	0
June	1043	1043	10	0	0	14
September	1057	1353	0	0	1	5
December	1303	2429	14	0	1	17

During the quarter (December) this company has become a dividend-paying one.

The Long Tunnel Mine looks well, and the company continue to pay large dividends. It may be mentioned that this company has already produced about 2,000,000*l.* sterling, and paid in dividends over 800,000*l.* on a capital of only 12,000*l.* It is a fact that the dividends from the gold mines in Victoria last year exceeded by nearly

twice the amount that of all other public companies, including all the banks, insurance, gas, trading, and manufacturing companies.

The Australasian Sketches, July 2, says:—The dividends declared by 24 mining companies in our list of Victorian dividend mines for the past month amount to 50,342*l.*, out of which sum the South Devonshire Company, Sandhurst, paid the large sum of 10,800*l.*; the United Devonshire distributed 6300*l.*; Garden Gully United, 3354*l.*. Amongst alluvial mines the Madame Berry Company paid 4500*l.*, and the Ristori 3600*l.*. Two new mines have been added to the dividend-paying list—the New St. Mango, at Sandhurst, and the Cornish Company, at Daylesford: 23 mining companies now in operation in Victoria, whose dividends have exceeded 50,000*l.*, have already paid nearly 6,000,000*l.* in dividends. There are besides some 50 other registered companies, whose dividends rank less than 50,000*l.*, and numerous private companies not quoted.

The American mines show even a greater profit; from a list of 43 companies, whose dividends have each exceeded 50,000*l.*, the large sum of 74,077,502, or upwards of 14,000,000*l.* sterling, have been paid, and the total output from American gold and silver mines this year will be about 20,000,000*l.* sterling. As an instance of profitable gold mining on low-grade ores under good management a few mines at the Black Hills, Dakota, in the last few years have mined and milled 1,512,037 tons of ore, yielding 10,434,116, being an average of 5*s.* 7*d.* per ton, paying in dividends 33,142,500, the total assessment being only 1400,000*l.*

In Queensland the Charters Towers gold field annual yield of gold is of the value of 300,000*l.*, and the stone gives an average of 1*oz.* of gold per ton. From the large area of rich auriferous country discovered this colony can soon increase its yield of gold, which is now about 1,000,000*l.* annually.

New Zealand gold fields for the year ending March 31, 1882, from quartz crushed 65,712 tons, averaging 1*oz.* 5 dwts. 18 grs. per ton. The total yield from alluvial and quartz was 293,229 ozs., value 1,170,520*l.*. The Northern Territory of South Australia, from a report received from the Agent General's office, it is stated that good progress is being made with mining considering the limited population; it is said very little stone has been crushed averaging less than 2 ozs. per ton, the total yield being 23,016 ozs., value 80,721*l.*

The Anglo-American and Australasian Mining Land and Finance Agency is being established to introduce first-class mining properties for investment, and development from districts that are well proved, and where mining has been and is now being profitably carried on, and to give special prominence to the value of gold mining as a legitimate and highly profitable industry when properly conducted. It is in such mines and districts judiciously selected that I can advise the investment of capital, and confidently invite the co-operation of those disposed to enter into legitimate and profitable mining on the basis of obtaining a maximum of profits with a minimum of risk or loss.

THOMAS CORNISH, M.B.

Author of "Gold Mining, its Results and its Requirements," &c.

NORTH CAROLINA AS A SOURCE OF GOLD SUPPLY.—No. II.

SIR,—The State of North Carolina possesses an extreme length of 485 miles, and a maximum width of 188 miles, with an area of 50,700 square miles, as nearly as may be the area of England. The total acreage is 32,450,560, of which 19,835,410 were included in farms in the year 1870; and of this latter area 5,258,742 acres were under cultivation, and 14,576,668 acres unimproved. The population of the State in 1870 was 1,071,361, of whom 678,670 were whites, and 392,891 coloured. The number of persons to the square mile being 21, or about two persons less than the average of the entire globe. It will be seen, therefore, that there is abundant room for a largely increased population, as well as a very great extension of agriculture and improvement of the land.

In my former paper I alluded to three features of the State as presenting opportunities for the profitable investment of capital:—(1) The uncultivated lands; (2) the forests, and (3) the minerals. Of these the first two have necessarily a very important bearing upon the successful development of the third. Prof. Kerr, State Geologist, from whose valuable reports made to the Government I am indebted for the foregoing statistics, enumerates the agricultural products as Indian corn, cotton, wheat, oats, tobacco, rice, potatoes, peas, fruits, rye, barley, buckwheat, hay, wool, sorghum, sugar, honey, wine, dairy produce, &c. Showing such a variety of the products of the soil as to ensure all the necessities of life. These products have largely fallen off since the war, by which it was estimated the population of the State was reduced to the extent of 50,000 souls. All the necessities of life are, however, very abundant and marvellously cheap, contributing by the low cost of living to the encouragement of works of enterprise and development. The climate especially in the elevated portions of the State is simply magnificent, the soil prolific, and the prospect for the agriculturalist most inviting.

The forests, which are very extensive, abound in timber of great variety, and adapted to every purpose, and await only the opening up of means of transportation to render them available to the markets of the world. They comprise oaks, walnut, and other varieties of valuable woods, the available and known supplies of which are rapidly becoming exhausted. The minerals of North Carolina embrace a great variety of ironstones, widely distributed throughout the State, limestone, copper, gold, platinum, silver, lead, zinc, tin, arsenic, antimony, bismuth, nickel, cobalt, manganese, coal, graphite, kaolin, soapstone, serpentine, asbestos, mica, corundum, garnet, &c.

Gold has been found in sufficient quantity for exploration in 23 counties of the State, and occurs both in veins and gravel deposits, extending over a wide area. At one time the yield of gold from this State was very great, and afforded employment to a large number of hands, but the gold discoveries in California diverted attention from North Carolina, and the subsequent disastrous civil war by which this beautiful state was devastated, practically crippled all enterprise, and beggared what had previously been one of the wealthiest populations of the Union. From so rude a shock the recovery has naturally been both slow and tedious; but at length public attention is being again directed to the dormant wealth of the country, and shrewd and enterprising men are pioneering the way to what will ere long become an arena of prosperity and advancement.—Aug. 15.

GOLD.

AKANKOO GOLD MINING COMPANY.

SIR,—I am glad to learn that Mr. Ross proposes to explain Mr. Gowans' report, as I can only make out that, for practical mining purposes, we have driven 354 ft. into soft earth, and sunk some 30 ft. to strike the driving at a cost of 32,000*l.* Then, "as to the best method of developing the mine for future working." Mr. Gowans proceeds vaguely to start us again with a fresh tunnel higher up, fresh site for saw-mill, and approves a fresh site selected for the erection of the crushing-mill. Accompanying this, to me, depressing report is a comforting circular from the directors, that "the board consider the report very satisfactory, and, now that the preliminary work of the mine has been accomplished, tangible results may be looked for." So once more to work merrily with trucks weighing 7 cwt., skips 98 lbs., trams on varying grades, with the lifting of quartz in some instances and the tilting in others, &c., and all to be effected by human agency alone, the trucks holding, as Mr. Lane says, about 1 ton of quartz. Hurrah for the sons of Anak! and, as if there were not enough to cheer us, the directors have already favoured us with a call of 2*s.* 6*d.* per share, and another gay effusion, this time from Mr. Lane and Capt. Jonathan Martin. Says Mr. Lane:—"That, supposing all timber removed, it (the tunnel) would be 6 ft. wide. To have made a larger tunnel would have been not only useless, but in such ground, &c., dangerous." So Mr. Ross is, *mirabile dictu*, right, after all. Notwithstanding Mr. Richards, Mr. Outwin, and Capt. Amundsen, all men fresh from the mine affirmed the contrary. In his last report Mr. Lane also says—Briefly the result of the tunnel is this:—

1. A thin seam of quartz.—2. A layer of mullocky pay dirt about 6 ft. thick.—3. A reef, as per samples, 3 ft. thick.—4. A fissure of about 6 ft. thick filled with mullocky pay dirt, and interspersed with ferruginous conglomerate.—5. A reef 3 ft. 6 in. thick. In every in-

stance the quartz from both reefs when crushed, and the pay dirt showed gold freely in the pan. The gold-bearing ground where we have struck will not be much less than 20 ft. thick.

Now this, Sir, appears to me phenomenal—ground, seam, reef, mullocky pay dirt, ferruginous conglomerate, and a fissure 6 ft. wide, and no country rock, no hanging or foot walls, no casings; in fact, a regular Tom Tiddler's ground, all "showing gold freely in the pan."

Here, again, I should bow to genius, but candour compels me to say I am unconvinced. No rock met with, only quartz, &c., and samples (see No. 3) now in London, and probably already assayed. But more good news yet. All on the Gold Coast know the general character of the ore is its freeness from pyrites and its excessive fineness, and as we have plenty of clear running streams, fine pure soft water, good machinery long since sent out, with foundations, all fitted and prepared in London for speedy erection of mill for crushing, we are going to have crushings and tangible results. Not a bit of it, Mr. Lane knows better. Let me use his words—"I am now arranging to puddle, and then cradle and pan off. I hope then to be able to send some little gold home before we get to mill work." Although I cannot by direct evidence tell you precisely what we are going to do indirectly, I can tell you somewhat by showing you what we are not going to do at Akankoo, and through you assure my co-members and the public that we are in a very miserable position, but at another time lest I weary you. My information will not intercept the transmission of gold and receipt of dividends, but it may yet induce a meeting of the shareholders to consider the management, and which can only be effectually gone into by a committee of business men.—Aug. 14.

AKANKOO GOLD MINE.

SIR,—As promised I send my notes on Mr. Gowans' report on the Akankoo Gold Mine, dated June 1. Leaving aside all matters not relevant to the issue there is very little to notice. In the first place, Mr. Gowans observes that the saw-mill site has been placed in a bad situation—too low, and recommends its removal to higher ground, on the north side of the tramway; consequently the expense of the 40-ft. well that has been sunk to supply the boiler is thrown away. In the second place, Mr. Gowans entirely agrees with my statement to the directors of May 8 last—that the adit or tunnel is too low placed and too narrow (4 ft. in the clear), notwithstanding Mr. Lane's report to the directors that it was 7 ft. in the clear, which Captain Amundsen and Mr. Ontwin also indorsed on their return home. I learn Mr. Lane now himself alleges his tunnel is 6 ft. without the timber. So much for words. Mr. Gowans recommends a new tunnel, on a 10 ft. higher level, 200 ft. to the south-west of the present tunnel, "with trucks discharging into a trap-door shoot for filling the trucks on the main line, and levels driven east and west on the course of the reef, and connected by winzes with the levels on the lower tunnel, and the proposed tunnel ventilated by an underlay shaft." Mr. Gowans appears unaware that the reef in the prospecting shaft was bottomed on a break at the depth of 50 feet, and that he is going in under old workings done by the natives, and that his proposed tunnel will be about 30 ft. above the reef, lying on its side, to say nothing of the danger to the men of working in broken ground. There is one thing he might have observed—that is, the hill dips rapidly to the south-west, and the reef is not near so high up on the hill as towards the east; consequently there is not sufficient back to warrant the expense of a tunnel on the level he proposes. A tunnel placed about 300 ft. to the east of the existing tunnel, and at right angle with the reef, on the level I proposed, with a single air-shaft, about 200 ft. south-west of Ponsonby Hill, and the air-shaft in connection with the tunnel was quite sufficient to work the whole hill. Had the existing tunnel been on a higher level and sufficient in width it would have wrought out the whole hill; its only objection then would have been its unnecessary length, because a much shorter site could have been found. As to the timbering of the existing tunnel, of which so much is made, I would simply ask Mr. Gowans if he examined it, or did he observe that there was an open space above the laths, from 1½ to 2 ft. its whole length? Did he observe that the 10-in. bearers were cut down on the ends to fit the tops of the props to 4 in. or 5 in., on an average, thereby reducing its strength already insufficient, and does he consider 4 in. or 5 in. of timber sufficient to support the roof in such ground? Did he observe there were no sole-plates under the props to prevent them from sinking in such soft ground, if weight came on them, which is very possible during or immediately after the wet season? Although the timbering looks well to a casual observer a practical miner would have seen these defects at once, and would have come to a different conclusion.

Mr. Gowans should have been more explicit as to his mode of working on the east side of his tunnel, seeing he would connect it with Mr. Lane's tunnel, which is on a lower level. It appears to me if his *quasi* suggestions are carried out it will be impossible to put out the quartz to pay, as there is extra tramway to make and shoot, besides the tunnel, and the shoot will cause a considerable loss of gold in tilting, besides the extra wear of plant. All miners know what I mean: ½ oz. per ton cannot withstand such luxuries. Mr. Gowans reports that Mr. Lane had commenced a winze on Ponsonby Hill, and struck the reef at 30 feet, and "an underlay having the reef as a footwall is being sunk," and Mr. Lane reported to the directors "that he was going to take up the reef, and shoot it down the hill." I may here mention that the length of this shoot will require to be 400 feet. Mr. Gowans wisely refrains from giving any opinion on the mode of working a winze. I quite agree with him; it is a difficult matter to explain, and I must confess I never heard of such a course of mining being pursued in all my experience.

Mr. Gowans reports that a site has been found for the mill on the south side of the tramway. This is the fourth site that has been cleared, so that the three previous sites are admittedly improper, and the expense of clearing them thrown away. Here, also, Mr. Gowans gives no opinion. I would simply ask him how high the site is above the tramway, supposing the battery foundation is placed at or above flood-mark? I maintain it will be about 8 ft. above the level of the tramway if so placed; but possibly, as expenses have hitherto been no object, Mr. Lane is going to make a tramway to the mill on a higher level—if not it will be up-hill work to take the trucks, weighing 7 cwt., and holding 1 ton of quartz each, to the mill by human agency. Mr. Gowans recommends the speedy erection of the mill. This should not be, as there is no quartz out, and the manager has neither got the winze down nor levels in, and until the winze is down he can get out only 3 to 4 tons weekly. It will be at least one year from this date before he is able to keep the mill in full work. I quite agree with Mr. Gowans that the workmanship on the tramway is well done; but I decidedly object to the engineering or laying it off.—Because it should have been made on level with the bank of the river, and not 4 ft. 3 in. under it, and that a slight detour to the north should have been made after passing the swamp, and thereby saved a long cutting, in some parts 14 ft. deep, and that 40 ft. of wharfage is quite unnecessary, 25 ft. being sufficient for all purposes.

I respectfully differ from the directors' remarks in their circular accompanying the report that the "preliminary work has now been finished." From Mr. Gowans' report it is evident the greater part has to be done over again before any tangible returns can be looked for. In conclusion, I may remark it is almost impossible for the directors, far less the shareholders, to ascertain the actual state of the works on the Akankoo, as there never has as yet been published any detailed report. When carefully accurate plans and sections are received it will appear that my report to the directors is thoroughly reliable, and another year will confirm my views. Repeated handling of the quartz, shifting from one grade to another by aid of elevators, tilting afterwards to a lower grade to convey the quartz to the mill; all these mean two things—vast increase in cost, and also like loss in gold. These two saved would alone represent a handsome dividend to the shareholders. So much, Mr. Editor, for mining without practical knowledge, for a knowledge of assaying alone is absolutely worthless and misleading. Let Mr. Gowans before he writes another report make good his promises to his company. If time before leaving England I hope to expose the fading management once again.—Aug. 13.

P.S.—The manager alleges that he is a Civil Engineer; but, as my

report shows, he is at constant war with Nature where she proffers her hand to aid him.

J. B. E.

MINERAL WEALTH OF THE SOUTH-EASTERN STATES OF NORTH AMERICA.

SIR,—Since posting my last letter to you [which was published in last week's *Mining Journal*], I have obtained a copy of the North State, a newspaper published at Greensborough, about 22 miles from this place. It contains an article by an old and much respected resident of this State, and so fully depicts the mineral wealth of this district by one well qualified to detail them, that I forward it to you in the hopes that you will be able to find space for it in the pages of the Journal, for I believe if the facts could be more generally known many capitalists would be induced to turn their attention to this pleasant and healthy district, as presenting one of the best fields for the investment of unemployed capital. My recent letters will have informed your readers how cheap labour and wood are in this State, and these are of the greatest importance in every mining enterprise.

HENRY MOON, M.E.

Thomasville, North Carolina, Aug. 4.

Subjoined is the "Brief Sketch of Mines and Mining in North Carolina," by J. T. FOSTER, Geologist and Mining Engineer, referred to:—

During the latter part of the seventeenth century nuggets of gold were found in Carrabbus and Mecklenburg counties quite frequently, which gave encouragement to search for the source from which these nuggets were obtained. The beds of the branches and larger streams were carefully examined, and rich gold deposits found, not only in the streams but in the alluvial drift which had been carried down from the decomposed veins on the hill sides into the valleys below. For a period of more than half a century the mining was carried on principally in surface diggings, and so abundant was the gold in these diggings that it was not unfrequently thousands of dollars were obtained from a single placer or deposit. Large quantities of gold (in bullion) were sent East and South in exchange for merchandise. So great was the commerce carried on in this manner that North Carolina became wonderfully famous for the extent and richness of her gold mines.

New discoveries were made, and placer mines opened along the branches and rivers quite up to the base of the mountains, and many of these mines proved to be exceedingly rich, and produced an abundant yield of gold without the aid of any machinery except the simple rocker and a quantity of quicksilver. Directly upon the announcement of a new discovery, miners could be seen hurrying to the place from all directions, eager to test the richness of the new bonanza.

When the surface diggings began to be exhausted, vein mining was attempted. As early as the Revolutionary war, perhaps before that period, for mining shafts had been sunk on Fisher Hill (about six miles south of Greensborough) which show a good degree of skill and experience in mining matters, and none of the oldest citizens have any knowledge or record of the time when these shafts were sunk, or the persons by whom the labour was performed. These shafts have long been known as the Revolutionary Diggings.

Both surface and vein minings were continued and pursued quite successfully in the counties of Guilford, Franklin, Davidson, Rowan, Cabarrus, Mecklenburg, Burke, and Rutherford along the great mineral belt, until about 1850 or 1852, when the work in many of these most profitable mines was discontinued, and one after another they were abandoned. They were abandoned, not because the ores were not abundant, but for the want of suitable machinery for mining them, and the requisite knowledge and skill to extract the gold from refractory ores which had been mined.

In the interval between the years 1837 and 1847 the yield of gold from the mines along the gold-bearing belt was so exceedingly large that capitalists sought investments in them, and made large fortunes from that class of investments.

The products of these mines were so exceedingly large, and the distance was so great to the Mint at Philadelphia to transport the bullion, that Congress relieved the miners of this heavy burden by establishing a mint at Charlotte, near the centre of the mining district, for the benefit of all those engaged in mining operations. Early in the year 1851 Dr. E. Emmons (afterwards State Geologist), at that time a near neighbour of the writer, made a tour of observation through the north-western part of North Carolina, and upon his return he gave such a flattering report of the gold mines which he examined while there that the writer was induced to go and make a geological and mineralogical examination of the mines in Mecklenburg and Rutherford Counties, with a view of securing some valuable mines for parties in New York. The first effort was only partially successful. A second visit was undertaken in order to perfect some of the negotiations already entered upon, as well as to secure other mines. It was during this second visit that the purchase of the Fortress Copper Mine was made.

Dr. Emmons was subsequently employed to make a Geological Survey of the State, and early in the year 1852 commenced his labours. I, being in North Carolina at that time, was invited to assist him in making the preliminary examination of the geological features of the State in order to ascertain the extent and direction of the mineral-bearing belts which were found to traverse the State in a direction from north-east to south-west in a line nearly parallel with the Blue Ridge. We found three mineral belts traversing the State, in lines nearly parallel with each other. The central, or granite belt, has a width of 10 to 25 miles, and the towns of Queensboro and Charlotte being nearly on a line with the axis of the belt, and by geologists it is considered as among the oldest formations on the North American continent. To the south-east of this line there is a large body of gold-bearing slates, having a width of 12 to 40 miles, where mines have been discovered and where fewer explorations have been made. . . . The whole extent of the gold-producing area in North Carolina is 12,000 square miles, and the number of mines which have been opened in that area is about 150, many of which have yielded large quantities of gold, and some of that class we will mention in this connection. The product of the Portis Mines, in Franklin County, can safely be estimated at \$2,000,000, worked only by the hydraulic method. From the Reid Mine, in Cabarrus County, there have been taken 115 lbs. of gold in the shape of nuggets, varying in size from 28 lbs. to ½ lb., besides what was taken out of the mine and saved by machinery, amounting in the aggregate to \$2,000,000.

Gold Hill is known to have yielded two millions at least in gold since it began to be worked systematically. Rudisel Hill Mine, near Charlotte, is known to have yielded one million worth of gold. King's Mountain has produced three-fourths of a million in gold.

The McCulloch and Fisher Hill Mines in Guilford County have produced since the first development, according to the records of those living in the vicinity, 300,000 lbs. each. The Parker Mine in Stanly County has a record of \$100,000 in gold, besides several nuggets found in the vicinity of the mine. It requires no prophetic vision to foresee that on these broad belts of mineral lands hundreds of mines will be discovered during the next 10 years that will prove to be richer and more productive than any which have heretofore been known. . . . The estimate of the gold coined at the Mint of North Carolina up to 1877 is \$12,000,000, probably not more than one-half the amount produced in the State. . . . It is evident that the reputation of the mines of the State have been discredited, and almost entirely destroyed by the valueless stock which unscrupulous speculators have based upon them, and by the results of that unfortunate conflict which exhausted all the available means of the State so that nothing was left for the development of her inexhaustible mineral resources. . . . The want of sufficient knowledge of geology to determine the localities of the metals, and the most desirable place to search for them has been one source of indifference. Some cheap and practical method of treating sulphurets, arsenical and other gold-bearing ores so as to make them remunerative is absolutely essential to the revival of mining industry in this State.

The opinion prevailed to a considerable extent at one time that no gold would be found below the sulphurets, but subsequent facts and developments have shown conclusively that the live, solid sul-

phurets contain quite as much gold as the decomposed ones. Whoever invents a cheap and efficient process of extracting even 75 per cent. of the gold from the sulphurets will be considered not only a benefactor to all those engaged in mining, but also to all the people of this commonwealth. Along these gold-bearing belts can be seen evidences of former great prosperity in the buildings and machinery which are rapidly going to decay; and the failure and decline are equally apparent wherever the mine did not yield the promised reward of labour into the hands of the miner. These abandoned mines are sad mementoes of former years and speak discouraging words to prospectors and adventurers.

There are a large number of mines (if reopened) would yield an abundance of sulphurets ores, which, if the gold could be extracted from them by some cheap and simple process, would add immensely to the real wealth of the State. Some of the causes and obstacles which have had a tendency to discourage mining in North Carolina have been briefly noticed. Now, the inquiry arises, what can be done to revive this most important industry of our State? A report was made of the survey of Dr. Emmons . . . and in 1866 the important work of completing the survey, so suddenly terminated by the death of Dr. Emmons, was assigned to one of North Carolina's distinguished scholars, Prof. W. C. Kerr, who completed the survey and submitted the report, which was approved, published, and laid upon the shelf in the library with its predecessor.

Some of the most learned of our citizens have acquired valuable information from these reports; but the great mass of the people are in nothing improved by them. . . . Shall the untold treasures in the mines of North Carolina sleep on for centuries, awaiting the time of a resurrection by the agency of the pick and shovel?

How can the mines be resuscitated? How can the prospector and miner be aroused and stimulated to open up some of the abandoned mines and bring to light some of these buried treasures. Here permit me to quote Prof. Kerr's report, which presents this subject more beautifully and forcibly than the writer is able to do in his own language—"Where are we to look, here in North Carolina in our depression, for the recuperation of our lost fortunes and the restoration of business, if not to her mineral riches hidden away in her subterranean storehouses." The connection of geology with mineralogy and mining is obvious and immediate, so much so that it is popularly regarded as simply the science of ore-hunting. It serves to direct and limit the operations of the miner, and tells him where his labour may profitably be expended. The geological surveys have extended over too wide a territory, and the reports have been too general to awaken sufficient interest in regard to this important resource of the State to induce miners to search for the untold treasures which lie buried beneath her soil.

The only remedy for this indifference to one of the most important resources of the State which suggests itself at this time, is a supplementary survey of the mineral belts and such other portions of the State as give evidence of having valuable mineral wealth in them. It has been stated, on reliable authority, that the refractory ores can be successfully treated so as to obtain 90 per cent. of all the gold they contain at a very moderate expense. This recent discovery is a strong incentive to North Carolina to publish her mines to the world. . . . When the mineral resources of North Carolina shall have been more fully developed, rich as it is in gold, silver, copper, coal and iron mines, which will be added to her other industries of agriculture, horticulture, and manufactures, then the State will be proud of its position among its sister States, crowned with the products of its varied resources, proud of its acquisition of wealth and power. Then all its sons and daughters shall rejoice to claim an inheritance in the Commonwealth of North Carolina.

[Referring to the above history, the North State remarks that Prof. J. T. Foster knows by practical experience what he states, having visited nearly all the mines in the State, and worked several of them practically and profitably. The mines which he selected invariably proved productive, and gave a large remuneration for labour and capital. The War of Secession seems to have temporarily annihilated mining enterprise in North Carolina, and it is only now that renewed attention is being directed to the enormous mineral resources of the State.

EIGHT OUNCE GOLD PER TON?—(BY ASSAY.)

SIR,—I see in one of your late issues a new gold mining company advertised with the above startling proof (?) of its richness, whilst one part of the statement also says there are many thousands of tons of surface stone which at even only half that return will pay well. I should rather think it would pay—not well merely—but splendidly if true. As a matter of fact, if stones showing free gold by assay of 8 ozs. per ton will yield 2 ozs. through the battery, it will be exceptionally good, and from my long experience here I should not expect more than 1 oz. at most, and should be satisfied if it even gave half an ounce, provided the stone was plentiful and not much mineralised. When the assay is from pyrites only, then the practical yield will very likely come somewhat near to it, as in this case the whole treatment is chemical and exhaustive, whilst with free gold it is merely mechanical. I see one of your Indian gold mines (Oregon, I think) has given 77 ozs. of gold from 100 tons stone. If this is a fair average, and the gold-bearing reef is anything over 18 in. thick, then its shareholders ought to see good dividends out of it (when the mine is fully opened up, of course.)

The following extract from the Sydney Morning Herald of June 19 gives a fair résumé of some of our various mines, and yesterday's telegram from New England mentions a new discovery of over 4 miles of tin-bearing country:—

"The Barmedman United Gold Mining Company have just finished a crushing of 33 tons of stone from the spar ground, which yielded 98 ozs. 11 dwts. of gold, or about 3 ozs. to the ton. The result of the crushing from Jackson's Gold Mining Company was 125 tons of stone from No. 2 paddock, which yielded 94 ozs. 11 dwts. 5 grs.; 107 tons from No. 3 paddock yielded 91 ozs. 12 dwts. 12 grs.; total, 186 ozs., or a little over ¾ oz. to the ton.

INVERELL, Monday.—The Victoria United Deep Lead Company have bottomed another shaft, at the Gilgai, on 2 ft. of good payable wash-dirt. This shaft is 60 ft. from the last one, and great results are expected.

The hon. secretary of the Stock Exchange reports the yield of the Band and Albion Gold Mine for the past fortnight to be 216 ozs. of gold from 680 tons stone. The mining manager of the Red Hill Amalgamated Gold Mining Company, No Liability, Tambora, writes under date, June 16—"At the 193 ft. level the underhand stoping on No. 1 vein has been continued. The three top stopes have been worked through into Perseverance ground, 15 ft. in length by 18 ft. in depth. North stope has been extended 5 ft. this week, making total length 53 ft. 'Three days' work have been done at the 223 ft. level, timbering the ground. Crushing will be commenced on Monday next, No. 2 quality stone being the first to be treated. Stone raised since last report 5 tons, making total quantity at grass 36 tons."

The manager of the Silver Valley Silver Mining Company, No Liability, under date, June 8, advises as follows:—"Shaft: We are getting on rather slow with this, having so far to haul the dirt, and having a little water. The lode is just as rich as ever, but the formation getting far wider as we go down. This I am putting for seconds, as it is full of mineral veins. Tunnel: This now in about 30 ft. on the course of the lode, with good easy driving ground. The lode has greatly improved within the last 6 ft., and it is one mass of galena, fully 3 ft. wide up and down the face, and going down in the bottom a solid lode of galena. As it stands at present it is the grandest lode I ever saw, but you must remember that lead lodes make in big patches. I may here mention that I have my doubts about this being the same lode as we have in the shaft. The country, as well as the ore, seems different, and in addition the course seems to be too wide apart. Another 20 ft. of driving will prove it. It will be a grand thing for us if it is a different lode."

The manager of the Caledonia Silver Mining Company, No Liability, under date June 8, advises:—"The lode in the main shaft is over 2 ft. wide all over the shaft, with seams of galena through it, and good stones of the same, with all the appearance of a good strong lode. Captain Phillips visited the mine, and remarked we would want smelting appliances as well as the Silver Valley Com-

pany, as they can raise enough ore to keep one smelter going. The dam holds water splendidly. We are now down 51 ft., and the oxides ore giving place to solid galena.

The manager of the Black Jack Mundic Company, under date June 8, advises:—“I have advertised for tenders for raising 200 tons clean ore on the western side of the underlay shaft from the drive downwards. This block should give us at least 200 tons, and have stipulated it should be altered as you direct. Mine: The eastern and western drives are now completed, and we are in a position to raise a large body of ore. I have added 10 tons to the heap this week.” Telegram, dated June 14:—“Tender raising 100 tons clean ore, 2½ ds. 6d. per ton. Shall I close? Concentrating 25 tons, looking well for free gold.”

A correspondent writes, under date Hill End, June 16:—“The following crushings have taken place this week at Bryers’ battery: Bozenburg and party of four men for 10 weeks, obtained 51 ozs. of gold from 42 tons; Letcher and Myers, two men, for 10 weeks, obtained 46 ozs. of gold from 23 tons; Chullee and mate, two men, for 10 weeks, obtained 31 ozs. of gold from 23 tons; Carver and Ross, two men, for four weeks, obtained 37 ozs. of gold from 22 tons. Other small crushings have yet to follow. The quartz from which these most encouraging results have been procured has been taken from a continuation of the Hawkins Hill veins which skirt the town, and nearly all the gold has been taken out of ground within a few yards of the main street and from shallow levels. The veins vary from 6 to 12 in., and exist in a soft red soil and pipeclay country, and being worked with pick and shovel makes the extraction very inexpensive. The produce of these crushings will leave the fortunate miners an average of 7½ to 8½ per week per man. During the great mining mania of 1873 all this locality was floated into companies, and partially worked, since which it has lain dormant, and would have continued so but for the patient enterprise of a few old reeffers who commenced fossicking a few months ago, and are now being well rewarded by the success that usually follows the plodding and patient explorer. There is no doubt that a new run of gold has been struck, but of its extent or value it would be premature to risk a statement. In the meantime the hopes of the handful of people left are raised, and the lucky holders of the ground are jubilant with their prospects.”

The manager of the Wesley Tin Mining Company (Limited) reports the yield of ore for the week ended June 16 to be 3 tons.

There is exhibited at the office of the Stannifer Bischoff Tin Mining Company (Limited), Spring-street, a box of splendid specimens of the lode tin, some weighing as much as 80 lbs., taken from the company’s mine, situated at Stannifer, New South Wales, and brought to Sydney by Mr. Dougherty, the local director. The manager states that the specimens are pronounced by experts as the best ever found in New South Wales. They were taken from different levels in the shaft, now sunk to between 60 and 70 ft., and show without doubt that there is an exceedingly rich lode of tin from the surface to the present bottom, and there is every indication of its continuing to an unknown depth, as the lode is making stronger and richer and more compact every foot sunk. The width of the lode is not at present known, as no hanging wall has yet shown on the eastern wall. The present width of the lode averages 8 ft., but it is Mr. Dougherty’s opinion that the lode will extend much further east before the hanging or eastern wall will be found.”

Sydney, June.

R. D. A.

POTOSI GOLD MINING COMPANY.

SIR,—It is cheering to notice that the investing public have, during the last few weeks, been turning their attention to gold mining, and more especially the Potosi Company’s shares, which, after having been down to ½ discount, are once more at par price. News has been received that crushing has been commenced, and in a few days we shall have results which are expected to show an average of 4 or 5 ozs. to the ton. It is rather a pity that the office does not furnish their shareholders with more fuller and frequent information as to the course of events. It is now more than a year since the last balance-sheet was published, and it would be satisfactory to know what money is now in hand, and whether there is any chance of a dividend this year.—*Austin Friars, Aug. 16.*

P. W. G.

NOUVEAU MONDE COMPANY.

SIR,—Having seen in the *Mining Journal* of Aug. 4 two letters signed “Investor” and “Enquirer,” asking for information about the Nouveau Monde Gold Mining Company, I may say that I am a shareholder and know from experience that it is difficult to get information about this company. I am however informed, on good authority, that the Nacupai Mine, in which the Nouveau Monde Company has a large interest, has been successfully drained; that the prospects are reported to be good; that milling has been commenced, and that the first remittance of gold is expected from the mine soon.

The company is also, I believe, interested in a gold and silver property in Nevada which I think it is their intention to work as lessees, or otherwise. Under these circumstances I think shareholders would be foolish to despair, after waiting so long, as it is quite probable that better times may be in store for them.

Knaresborough, Aug. 16.

NACUPAI

HOOVER HILL MINING COMPANY.

SIR,—I observe that you make some comments in connection with the report of this case, and suggest that the name of the “wrecker solicitor” should be published. I am the only person of the name of G. Terrell in the Law-list, and certain kind friends have forwarded me, and also I find some clients, an extract from the *Journal* with the name underlined. I beg to inform you that I am not the individual referred to, and that I know nothing of the matter, and had no concern therein. I shall feel obliged by your publishing this disclaimer.—*Walbrook, Aug. 14.*

GILBERT TERRELL.

IS THERE SUCH A THING AS LEGITIMATE MINING?

SIR,—Is a question which oftentimes arises and perplexes the minds of legitimate mining speculators (their name is not legion) after going through the “singing” operation. Mark the words legitimate mining speculators, which do not include those who purchase shares merely for jobbing purposes (the name of these is legion), and these are the people who only too often yell out before they are hurt. These knowing ones, to start with, are invariably brought to their senses, and why should not they be? According to my idea it is in the natural order of things that they should, as they would have us believe, or rather palm it off on society, that they were honourable men (and so they are after Brutus’ type) but inside they are ravening wolves. I will endeavour to explain myself as I evaporate. These “honourable men,” for they might have been before they manfully fought under that banner with a “bull” on one side and a “bear” on the other, in a case of disaster to a concern they once cherished in their bosom (for selfish motives) are the first ones to cast a stone when they have missed fire or clung to their scrip as tenaciously as a limpet to the rock in hopes of realising more before selling out. But suddenly—alas, for the “honourables”—the tide turns against them, which acts as an emetic; they begin to vomit their venom in railing against dishonest promoters, and their whining is often heard in the columns of the *Mining Journal*. An old aphorism for their benefit—People who live in glass houses ought not to throw stones:—

Oh! wad the power some giffle gie us
To see oursel’s as others see us.
It wad frae many a blunder free us,
And foolish notion.

I should be delighted to witness a reorganisation in their army, and if I am the means of raising up, no matter in how small a degree, one of these degenerate ones of mankind I shall then be satisfied. I shall have reached the apex of my ambition, and shall be ready to leave my bones in this planet and soar away to that undiscovered country, from whose bourn no traveller returns. To effect this much desired reform I would advise them, in the words of our greatest Christian authority, said to a certain woman, “Go thy way, and sin no more.” But the question asked in the heading of this letter still remains

unanswered. I reiterate it—Is there such a thing as legitimate mining? Some are prone to believe there is not. My answer is most emphatically, yes. Some inquisitive person, one of the “singed ones,” may ask the pertinent question—How and where are we to find it? I leave this an open question, pending an answer from the great philosophers who weekly peruse the *Mining Journal*, and if they fail to supply it satisfactorily, I will give my version as to the mode of finding, and the whereabouts of what appears to sceptics almost as difficult to get at as the philosophers’ stone.

Perranporth, Aug. 14.

W. NIXESS.

MINING IN NEW MEXICO.

SIR,—I send you herewith a few items about the mines in this part of New Mexico. Our camp lies in the north-western corner of Grant County, near the line of Arizona, 18 miles from the copper mines at Clifton, and on the same belt. The leads carry copper, gold and silver—formation, porphyry, granite and syenite. The silver occurs in the form of black sulphurets and horn silver, the gold being included in the same rock. The copper lies principally in beds by themselves.

There are here a number of claims on which work has been done. Among these are the Mitchell, having one 90 and one 50 ft. shaft, and 100 tons of ore on dump, averaging \$96.60 silver, and \$5 gold per ton, and the Tuck Mine, with the same amount of work and ore out. The Silver Rain has 210 ft. of work done on it—one shaft 100 ft. deep, another 50 ft. deep, with 60 ft. of drifts—and 250 tons of ore on dump, averaging 75 ozs. silver and \$16 gold per ton. We have had a thorough sample made of our ores with the result above, which beats the Tombstone Mines.

The Little Emily, the Great Eastern, Nugget, Diamond, Eagle, Rose, Rainbow, and a number of other mines, all look as well as those mentioned for the amount of work done on them.

In the West Cam, 3 miles from us, the Carlisle Mine, which has a 20-stamp mill, is turning out bullion in considerable quantities. The output of April was \$48,000, with 10 to 15 stamps, and for May, under 20 stamps, some \$65,000. The above are all in the Steeple Rock mining district.

Wood and water not over-plenty, but plenty of water will be reached in depth, and wood will last until the railroad gets through. The nearest depot is 20 miles off, with good roads to it. From Lordsburg on the railroad to Duncan is 38 miles, and 9 miles from there to this camp.

Arthur H. Cadwell.

Richmond, Grant County, N. M., July 3.

FALLACY OF AGGREGATE VALUATIONS.

SIR,—In replying to your Manchester correspondent, “K. C. B.,” in last week’s *Notices to Correspondents*, you say the statement that “the aggregate value of the points in operation at so much per fathom is fallacious and intentionally misleading, because the aggregate cost of working the said points is concealed.” To what mine you refer I do not pretend to know; but I would call your attention to the circumstance that in most mines the monthly setting reports are given in your *Mining Correspondence*. These give the cost of “working the different points” for a month in advance; and, therefore, the aggregate values during that month are no mean guides. In last week’s *Journal* I observe that five mines publish their monthly setting reports in this way—Bedford United, Okel Tor, Prince of Wales, Wheel Crebor, and Wheel Uny. For the next month, therefore, the aggregate values of these points will neither be “fallacious nor intentionally misleading.” Since your last issue I have received the monthly report of Bratsberg, wherein the aggregate values are extraordinary, and exceed 400%, and it would, I confess, be more satisfactory to the shareholders, could the information as to the cost of each point be given; what it costs to drive a lode 5 ft. wide, and worth 13½ per fathom; whether the stopes are in excess of what they should be in good mining; and what is the cost of working of each 12½ stopes?—*Aug. 14.*

INQUIRER.

MINING LEASES.

SIR,—The members of the Cornwall Mining Institute held a meeting at Redruth, on Aug. 9, to discuss the subject of the leases of mines. A paper was read suggesting the terms on which such leases should be granted, and the reader thereof promised to embody in a bill, to be submitted to Parliament next session, the several alterations which should be made in the existing terms. The bill, as already drafted, contains in brief the following articles:—

- 1.—That where a landowner refuses to grant license to mine within his lands the Vice-Warden of the Stannaries shall, upon application being made to him, grant the applicant power to work on certain conditions.
- 2.—That the land destroyed or injured by mining shall be paid for according to its commercial value, such value to be settled if necessary by arbitration.
- 3.—That no dues or royalty shall be payable except out of profits made on the working; that the dues be 1-12th of the profit realised.
- 4.—That a lease where granted shall be for a term of 60 years, but where possession is given without a lease the miners shall keep possession so long as they continue to work in a minerlike manner.
- 5.—In case the miners fail to exercise the powers granted to them, and thereby prevent other miners who would or might work, or if they work unfairly, they shall pay such a sum by way of rent or fine as shall be determined if necessary by arbitration, and the owner may eject them by giving the usual six months’ notice to quit.
- 6.—That all buildings erected by the miners shall be their property for the same term of years as that usually granted by landowners for building sites in Cornwall.
- 7.—That where there are joint owners of the mineral rights they shall all join in one lease, to save the cost of more than one instrument.
- 8.—That the recently-introduced practice of charging minimum rent shall not be lawful.

The above is the substance of the draft bill prepared to-day. I write this to invite from your readers suggestions for its improvement. When it is made as far as possible perfect it will be laid before the Institute committee for their consideration. I would not submit to the committee any condition between lessor and lessee of an unreasonable character. In the present mode of leasing reason is ignored.—*Truro, Aug. 14.*

R. SYMONS.

MINE DUES AND LEASES.

SIR,—The speculating miners of Cornwall have submitted for a long period, not without some murmuring, to the hard terms imposed on them by the mineral owners in their leases for mining. The miners have always been at the mercy of the lords, who often refuse to grant leases except on unreasonable conditions—high dues, high rents, exorbitant charge for land, &c. And there is nothing of uniformity in the different lords’ conditions; some charge 1-15th dues, some 1-18th, 1-24th, &c., everyone exacting according to his individual will, having the power, in his idea, of refusing to grant at all. Landowners, it appears to me, have looked upon their grant of a lease as a favour conferred on the lessee. The lessee, by developing the mineral resources of the land, confers a benefit on the lord, and not the lord on him. Lords will rarely risk much, if any, of their money in mining speculations; they ought, therefore, to afford every encouragement to those who will do so by granting mining leases on reasonable terms, which hitherto has never, or rarely, been done.

The investors of capital in mines in Cornwall and Devon are anxious that better security shall be given for their outlay, by eliminating from the leases every unreasonable stipulation, which at the present time cramp and discourage speculation. Speculators want what is called “fair play” between party and party. The metallic minerals are a portion of the commonwealth, and it is the duty of Parliament to see that they are made available for the nation’s good by search for and utilisation of them. In order to bring about a better state of things than that now existing it is proposed to seek parliamentary interference and power by an Act to ensure a fair arrangement between lords and miners. The abstract which I sent to you yesterday of a proposed bill does, in my opinion, contain only fair terms, but as there is ample time between this and the next ses-

sion to consider and mature the bill I hope we shall then go before Parliament with a measure so fair that even the lords will not object to it. The lords, as a rule, are reasonable men, but they have been hitherto acting in conformity to old and absurd customs, which should no longer exist.—*Truro, Aug. 15.*

R. SYMONS.

LEAD MINING IN EAST CUMBERLAND.

SIR,—The low price of lead which has ruled for some time past has made its effect felt on the mining industry of East Cumberland as elsewhere. Many, indeed most, of the smaller mining concerns have either ceased operations altogether or are carrying on with just a sufficient number of hands to enable mining lessees to hold the leases. There is no doubt that in the present state of the lead market the small mining companies can do no good except where they hold mines of quite exceptional richness. Only large companies possessing machinery of the latest and most complete description can work to any profit. The only company in the famous Nenthead district which appears to be making any way is the Nenthead and Tynedale Lead and Zinc Company (Limited) which, in the end of last year, took over the mines and smelting works of the old London Lead Company at Nenthead. This company appears to have made fair progress, and the results of the working, as set forth in a printed memorandum which is before us, show a very considerable increase in the output from the mines. The yield of the two first quarters (36 weeks) has been 3004 bings lead ore, and 1460 tons of zinc ore against 2421 bings lead ore, and 634 tons zinc ore in the corresponding period of the previous year.

This company, no doubt, has a great advantage over their predecessors in having excellent zinc smelting works. This has given them the opportunity of utilising the extensive zinc ore deposits which they hold. In giving special attention to the working of these lodes they have greatly increased the yield of blende or zinc ore, and also have increased the production of the lead ore which in greater or less proportion is associated with it. The abundance and cheapness of the power which the company commands in its great water supply, the extent and complete character of the dressing machinery which is of the most modern type, and their smelting and desilverising works no doubt greatly assist the advantageous working of the company, as it enables them to deal with such a large quantity of mineral at a very cheap rate of working.

As was said above only large companies with powerful machinery can do any good whatever; but all the companies, small and large, might be aided by a reduction of royalty dues, which are generally too high to enable British mining to compete successfully with the foreign producers, who, in respect of royalty rent, are lightly taxed in comparison with the lessees of British mines. This matter has become very pressing, and requires dealing with promptly, or the decadence of mining in this country will certainly continue.

Newcastle, Aug. 13.

J. C.

NENTHEAD AND TYNEDEALE LEAD AND ZINC COMPANY.

In sending notice of the call which accompanies this, the directors have thought it would interest the shareholders to have some information respecting the company’s operations. Having completed two of the terms—or “quarters” as they are locally called—extending together from Oct. 1, 1882, to June 9, 1883, a very fair idea has now been obtained of the mines and smelting works, of their condition and power of production. In all respects they have proved to be at least as good as was anticipated. The scheme of operations indicated in the prospectus of the company has been steadily followed. Working was commenced at several points on the richer zinc ore deposits, and is being carried on with satisfactory results. The effect of this is very clearly shown in the produce of the mines, in which there is already a very considerable increase. The production during the time in question has been lead ore 3004 bings, zinc ore 1460 tons. This, as against 2421 bings lead ore, and 634 tons zinc ore, produced in the corresponding period last year. It is evident that the system of development which has been commenced, and which will be continued by the present company, is being attended with a large measure of success. For the last six years the yield from the mines has been more or less steadily increasing, but the recent operations have resulted in a much greater and more rapid improvement than has taken place at any time during this period. The smelting establishments of the company are in a state of excellent order and efficiency, and have produced during the term in question 1021 tons market lead; 262 tons market litharge; 1114 tons market spelter; 9544 ozs. silver. The only drawback is the present extraordinary low price of lead and of zinc. It is hoped, however, that—as has always hitherto been the case when prices have touched so low a point—a reaction will soon set in, and the market resume its normal condition.

MINING NOTES AND RECOMMENDATIONS.

SIR,—Gold mining on the Gold Coast has been so far confined to Wassaw, the Tacquah district being the chief centre. Tacquah, one of the largest towns in Eastern Wassaw, is built in a valley, hills on both sides rising 250 to 300 ft. run in a north-easterly direction for a distance of 12 to 14 miles. Two streams flowing from the north join to the south of the town, and here a dam has been constructed by the French Company, and the consequence is a large swamp has been formed, which is believed to be very adverse to the health of the town. From the pool of water, which is all but stagnant, mists and malaria arise, and soon affects the constitution of Europeans. Mining operations have been carried on by the African Gold Coast Company, Messrs. Swanzy, the Effuente Company, the Gold Coast Company, and the Tacquah, besides several private companies. Up to the present results have not been of a satisfactory nature expected from this promising district. There have been great hindrances to overcome, but although time and money have been spent they have not been fully mastered, nor does it seem likely that they can be unless there is more united effort on the part of the several companies interested or the help of the Gold Coast Government is obtained. The transit from the coast is of a most wretched character, and nothing appears to have been done to effectually remedy the evils. Each company in turn has been at the trouble and expense of constructing its own road, and having carried their materials to the mines have sat down contented.

There have been efforts made to get the companies to construct a permanent road, but having spent individually money upon this work they have declined to work in unison on, it would appear, the policy of “do as we have done, and construct your own roads,” forgetting that in time they would require the further use of the roads in carrying heavy machinery so much required. As regards the railway which has been long talked of, from the coast to Tacquah, nothing further has been done than surveying the route. It may be that the promoters of this scheme, seeing the mining companies have made such little progress, there is nothing to warrant them in constructing the line, and so hold back. There is, doubtless, little to encourage the project, and yet if this line were constructed it would be a means of inducing further capital, and would also put the old companies on a better footing, if not inspire them with new life. The funds of nearly all of the established companies have become exhausted, and they cannot afford to spend further sums in improving the roads and building new bridges in place of those which are washed down by the swollen rivers. Another great advantage would be, were the railway constructed, Europeans would be able to run down to the coast two or three times every week, and so have a better chance of keeping in health. It would appear that the residence of Europeans is of but short duration at Tacquah, the average time being about 12 months. The natives at and around Tacquah are for the most part engaged in mining; the population is naturally unsettled, and, like all who are engaged in mining, moving to the richer districts.

The rush of labour from the coast has been very large, and the worst characters have made the gold fields a sort of happy hunting ground. Abosso has been the most attractive place at one time, 1000 hands being employed by the company (the Wassaw), in addition to large numbers of women and children washing for gold on their own account. The excitement locally has been considerable, and concessions have been sold all over the district, to such an extent that there is hardly a square mile in the province of Apinto that has not been rented. There is evidence in this of a firm belief in the district as gold-bearing, and also that in the near future greater capital will be attracted. The French Company have bought a number of concessions, and a London firm has bought about 14 properties. The great fear is, that from the granting concessions indiscriminately, serious complications may arise, unless rules and regulations are adopted for the guidance of landowners. It is found that the measurements overlap one another, so that it would be well for any future companies to look closely into this matter. That companies will be formed is pretty sure. The opinion of the Government officials is that there is a great future for this colony, and the signs

of metallic wealth are abundant. The two ranges of hills referred to have only been worked in part by the companies named, and the principal attention has been given to the eastern range. The reef of quartz which is being worked is believed to extend along the entire length of the western face of that range, the width of the vein varying from 2 to 8 ft., underlying westward at an angle of 40°.

It is to be regretted that the Government does not appoint experts to give a report on this district, while they supply a general information there seems to have been no one sent who could give an idea of the value of the gold deposits. The Government enterprise in this direction is directed in collecting specimens for the School of Mines. It is to the interest of the Government, as well as the public, that we should have a pronounced official opinion as to value and extent of these gold fields. Commissioner Higgins in his report says:—

I wish to bring prominently under your lordships' notice, as it is advisable that the public should not be misled by erroneous reports about gold mining business in the Gold Coast colony. Sometime ago two Europeans arrived at Axim with two donkeys with the idea, I believe, of going far up the country and buying concessions. They went to Apollonia and up the Tando River, where one of them died, and the other man finding it impossible to go on returned to Axim. About a week ago (June, 1882) he came up here to see the mines prior to returning to England. This man, who has been at Axim, is, of course, greatly disappointed in the country altogether, finding it impossible to get small concessions and work them as diggers do in Australia and at the diamond fields. He told me, however, that, owing to statements in the newspapers, &c., made about this country, many people were leaving the Cape to come here as diggers. It will be a pity if this turns out to be true, as I fear many, if not all of them, will make the journey for nothing. Europeans cannot work here as they do in other countries, and the mines have all the people they require sent out direct to them, and will not employ strangers. Two other Europeans made their appearance here this month, and after a week's stay left for England again, one was a clerk and the other a baker, and they came out with the idea of picking up some of the gold to be seen in the streets after the rains. Not seeing the gold, however, they had to return from whence they came empty-handed.

Such instances as these are common in the history of the gold fields of the world; the only wonder is that more have not gone there. This extract does not disprove the existence of gold; that fact is too well established, though we are wanting in more definite knowledge. If we want to be assured that there is gold there we have but to turn to the present dispute between the King of Ashantee and the King of Gaman, and find that one of the claims against Gaman is 18,000 ozs. of gold stolen from the King of Ashantee's messengers. Government policy is somewhat short-sighted, or it would guarantee the interest to a company to construct a railway to the gold district. Besides these special interests the country is very rich in natural products, which are year by year becoming more important. The construction of a line of rails would in every sense benefit the natives, and be the means of largely increasing trade. The Blue Book just issued lets us into many secrets. It is a pity the mining directors have not taken their shareholders into confidence more than they have done, and then disappointment would not have been felt in the same way in which it has been. The sum of testimony in this book confirms all that has been said of the West African gold fields. The quartz is rich, and the amount very great. It requires perseverance and the expenditure of money in improving roads or making railways; then, though the climate is against us, we shall be able to make great progress, and have the satisfaction of seeing a gold field opened up which may prove as rich, if not richer, than any known.

E. R. GABBOTT.

CORNISH MINING—THE GWENNAP DISTRICT—IMPORTANCE OF CROSS-CUTS.

SIR,—The importance and prospects of the county are derived chiefly from the existence of mineral, and has proved a source of wealth for centuries; many of its mines worked successfully for periods of 50 to 100 years and over, the most renowned in this district being Great Consols, Clifford, United Mines, Wheal Buller, Penstruthal, and Tresavean. The latter can boast of four epochs in its history. Records as far back as 1745 are given of it as being originally worked for tin, and copper was discovered very near the surface. Thirty years after this another company worked it for copper. The profit in this working is recorded to be great, but the lode becoming poor, it was abandoned. The mine was some time afterwards again drained, and the workings prosecuted to great advantage under the direction of the Messrs. Williams, of Scorrier House, when the lode became lost, driving being continued on a branch of it instead, after which a cross-cut was driven a short distance and discovered the main part of the lode standing in whole ground for a long distance. It made profits for the time of working over 1,000,000l. sterling. In those days it was by no means uncommon for the miners to miss the main direction of the lode, and drive considerable distances in barren ground, leading to abandonment of the mine, and on being recuscitated after many years the mistake has been discovered, as was the case in the early history of Great Consols and United Mines, which worked successfully at four distinct periods.

The draining of Tresavean by the present company would seem to have discovered a similar fault made by the late workers. The 100 has been driven by the side of the lode for a considerable distance, a short cross-cut having uncovered it; so far as seen (2 ft. wide) it appears to be standing 50 fms. long and 45 fms. high, representing a large amount of ore ground; judging from similar discoveries in the district its importance cannot be overrated. A similar discovery was made many years ago in Botallack Mine, St. Just, just on the eve of its being abandoned, which has led to profits up to date of over a quarter million sterling. The ancient workers of Devon Great Consols were within 3 fms. of the great deposit of copper ore, which gave dividends of 72,000l. the first year, and the shares advanced from 1l. paid to 800l. per 1024th share in the following year, thus showing the importance of cross-cuts, by which the wonderful chambers of wealth hidden in the earth become developed.

Scorrier, Aug. 15.

CHARLES BAWDEN.

A VISIT TO EAST WHEAL ROSE, OLD SHEPHERDS, AND TRESAVEAN MINES.

SIR,—Being a shareholder in some of the Cornish mines, and having heard many reports, some adverse and others favourable, I thought I would take the opportunity of visiting some of them whilst on a tour in Cornwall. Stopping at Truro, I drove to East Wheal Rose, a picturesque drive of about nine miles, travelling chiefly on the top of the small hills between Truro and Newlyn; here I was shown over the workings under the superintendence of Capt. Doidge, who gave me every facility, and straightforwardly answered all my questions. Here anyone who knows anything of engineering is struck with the size and power of the two pumping-engines, and there is just reason to suppose that when the North Wheal Rose engine shortly goes to work the mine can be worked at a much greater and more payable depth.

Continuing my drive round the slope of the hill I came to Old Shepherds Mine, situated on a flatter piece of ground; here I met Capt. Nancarrow, who showed me over the overground works, and I was much interested in Green's dressing machinery, which, though on a scarcely large enough scale, appears to do its work well, and, as far as I could judge, jigs and catches nearly all the lead contained in the ore. I saw also the new crusher in course of erection, and a portion of the new dressing machinery, which is capable of manipulating 80 tons of ore per diem. At this part of the mine great energy appears to be displayed, and the whims are being attached to the winding-engine to work three separate shafts for drawing stuff to surface. The agent seems confident that when the mine is shortly drained to deeper levels it will be placed in a paying condition.

The next day I took the train to Redruth, a picturesque town and great mining district here. I soon found my way to Tresavean Mines, by walking a distance of about two miles, passing North Penstruthal, with its picturesque engine-house high on the hill, and past Wheal Comfort, which ought to be doing good work if one might judge by the noise of its stamps. I came to the Tresavean account-house, where I met the agent, Capt. J. Prisk, who kindly showed me over the mines; here I found 30 stamps in action, and was much interested in the dressing and calcining of tin, in which Capt. Prisk seems thoroughly at home; then I saw a small parcel of copper ore ready for market, and was much struck with the good and firm condition of the shafts, which have mostly been sunk in the solid rock. From general appearances I was much interested in

what I saw at these three mines, and given a sufficient time there is no reason to doubt that they will pay.

In conclusion, Sir, I may add that I know none of the directors or vendors, and only one small shareholder, whom I casually met at the offices when demanding a pass for the mines. J. H. F.

Oak House, Aug. 15.

EAST WHEAL ROSE GROUP OF MINES.

SIR,—Perhaps some of your readers, interested like myself in the fate of these mines, would kindly express their views regarding the present position and prospects of these concerns. At this season of the year when the shareholders of all well-conducted and enterprising companies are called together to hear a quarterly, four-monthly, or half-yearly report of the doings of the directors, with a statement of affairs laid before them, I have been waiting patiently for a notice to this effect from the directors of these mines until I had given up hope, when I naturally appealed to the secretaries of the companies for information and assistance in my difficulty; but the reply afforded me by the officials is to the comforting effect that "it was not the intention of the directors of the mines referred to, to call meetings of the shareholders at present," and no further information was volunteered.

At the present time, when our properties are so much cried down and so many varying rumours are afloat about these and other mines, it is surely not calculated to inspire much confidence in the directors and officials when they treat the poor shareholders—the parties who are really the sufferers—with such careless indifference to their interests.

There never was a time when the minds of anxious shareholders should be authoritatively set at rest from the onslaughts and disquieting rumours daily floated regarding the present position and prospects of these concerns. This cannot better be done than by a clear statement from the directors of what has been done by them on our behalf for the six or eight months since the last accounts were submitted to us. I trust some other shareholder who feels the hardship of this treatment will express his views, with the object of inducing our directors to supply us oftener with a report of their stewardship and the progress made to bring our property to a dividend-paying condition or otherwise. If anything is amiss it is only fair and manly to say so, and not keep poor sufferers in suspense.—*Dumfriesshire, Aug. 13.*

J. A. M.

BEDFORD UNITED MINES.

SIR,—I will thank you to find room for a few additional lines respecting this mine to that you kindly inserted a fortnight since. It being pretty generally known that I entertain strong views with regard to the ultimate success of the mine, I have, in deference to the wishes of certain parties, discontinued writing on it for some time on account of the possibility of the same being misconstrued. I have no other object than to give encouragement to *bona fide* investors, among whom I number a good many friends, who are pleased to have an occasional line by this medium. I take care not to make statements which cannot be verified by any practical miner on inspection of the property, and I avoid statements as to valuations in order not to differ with the reports of the manager, whose values and estimates are never too high or overdone; and whilst on this point, I would remark that I consider the operations are being directed in a manner that cannot fail to bring about successful results.

On enquiry I learn that the lode, both east and west of McCallan's shaft at the 62 fm. level is rather improving in size, and my object now is to advise against any disappointment arising from the fluctuations in values, which are sure to take place often at this depth, when the ground is so favourable and the lode of such a character. Preparations are making for the sinking another lift, and I believe as each successive lift is sunk the lode will greatly increase in value. To use an illustration, I regard the backs of this lode to its present depth as very fine blossom; the present condition of the lode, with its splendid quality ores may be considered as very fine setting of the bud, whilst every surrounding indication in connection with it is promising a most abundant harvest of copper. The position of

the shaft is all that can be desired, the western levels from which will soon be nearing the great productive side of the district, near which the great parallel lodes have yielded immense bodies of ore. The very fine prospects, together with the firm financial position, give great encouragement to true investors. WM. PHILLIPS.

Whitchurch, Aug. 16.

SHROPSHIRE LEAD MINES DISTRICT—TANKERVILLE GREAT CONSOLS.

SIR,—We thank "J. W. H." King's Norton, for the information given of this mining company in last week's Supplement, and we think with him that every shareholder in it should take up some of the preference shares. We have not the least doubt but that every attention will be paid to the working of the mines as cheaply as possible, consistent with honesty and fair play. We are, however, at a loss to know how shareholders can expect directors to work for nothing, or next thing to it. It appears to us to be very inconsistent for shareholders to expect boards of directors to work mines, &c., on the best principle, and every modern improvement must be applied, everything wisely and well done, and do it all for little or nothing.

We are pleased with this amalgamated range of rich mines, and under skillful and efficient management we shall expect great results. The figures given by "J. W. H." show that 22,037l. worth of minerals has been returned during the time the mines have been in process of unwatering, &c., and had lead ore been at anything like what miners consider a fair price that amount would have been 30,000l. We have been hoping for some time that the directors would resume the sinking of Watson's shaft at the Tankerville part, and are now glad to find they have done so, and that it is in process of sinking, and we anticipate their having a lode worth 10 or 15 tons to the cubic fathom again. The lode is very wide, the same as they had higher up the mine, where the lodes were together. They have four good mines—Tankerville, Potter's Pit, Pennerley, and Bog, and as they are all opened out and extended their returns will increase. We hear that the lode in the very bottom of the celebrated Old Snail-beach Mine is worth quite 5 tons of lead ore per fathom, and improving as it goes down. Roman Gravels yields lead ore in profitable quantities throughout its extensive workings. MINER.

[For remainder of Original Correspondence see this day's Journal.]

A FLASH OF LIGHTNING DESCENDING A COAL MINE.—A most unusual and extraordinary occurrence took place at Dinnington Colliery, the property of Messrs. John Bowes and partners, during a thunderstorm. The electric fluid seemed to strike the west winding rope of the west shaft in its elevated position upon the pulley. One current passed down into the winding engine-house, where it was seen to flash up and down the feed pump below the level of the floor, and quite illuminated the place at the time; another current passed down the rope to the bottom of the shaft, a depth of 35 fms., striking the cage, which fortunately was standing upon the bottom at the time, and exploded. The onsetter describes it as like a ball of fire falling upon the iron flat sheets at the bottom. He had his hand upon the cage, and received a smart electric shock, and was nearly blinded by the flash for the moment, but fortunately received no personal injury. The shaft is fitted up with round wire rope guides for two cages; these guides are suspended from the top of the pulley frames or head gearing, and secured at the bottom by heavily-weighted levers. These iron rope guides would probably act as lightning conductors, and thus lessen the shock of any excess of electric fluid by carrying it off into the sump. Had the cages been running in the shaft at the time, and the shaft fitted up with the usual wooden guides, serious damage might have been caused, which would have been most difficult to account for or explain. After careful examination of the frames, pulleys, ropes, shaft, &c., no injury could be detected. At a time when the convulsions of Nature have so recently caused such a lamentable loss of life and fearful destruction, a considerable amount of alarm was felt for a short time.

—*Newcastle Chronicle.*

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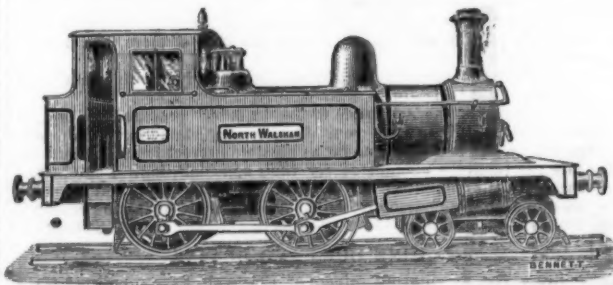
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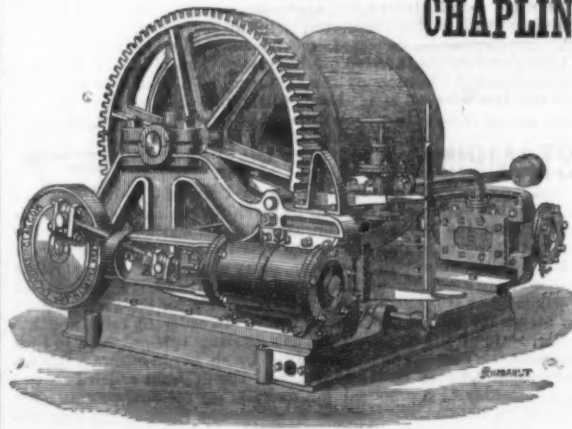
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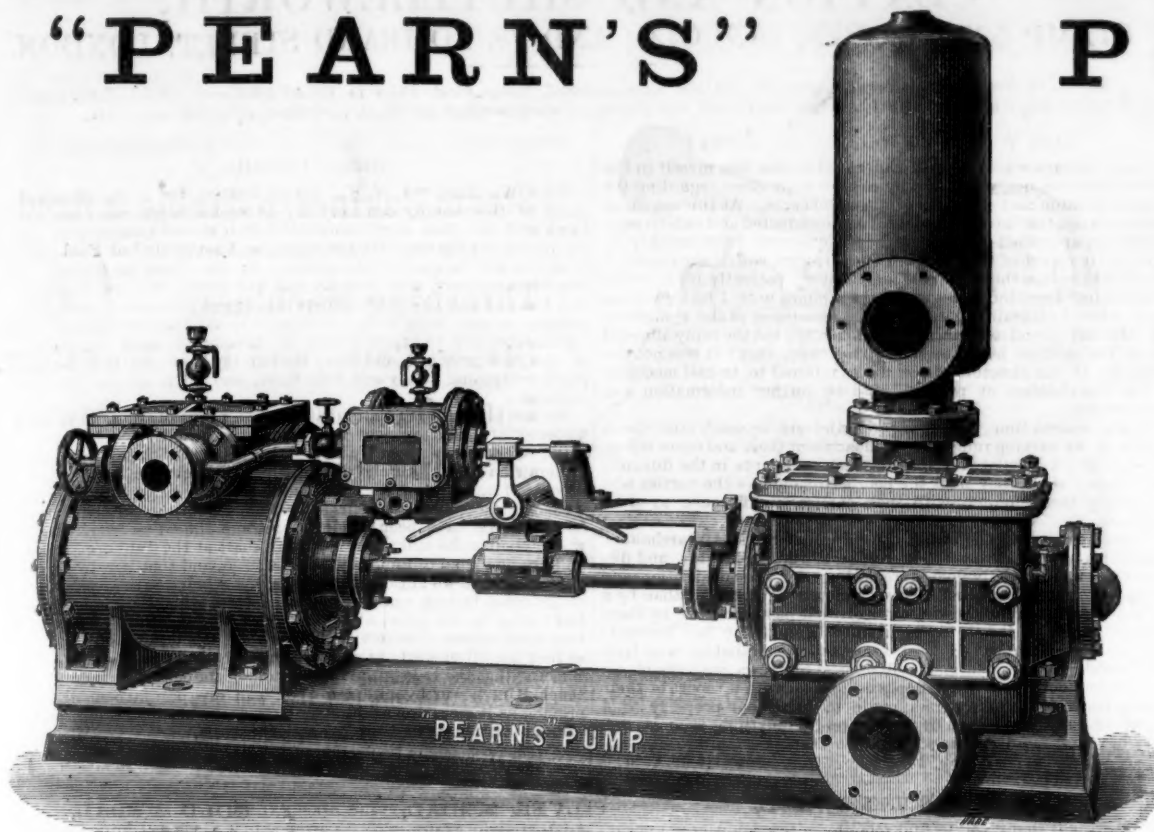
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DIAMETER OF WATER CYLINDER..... In.	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
DIAMETER OF STEAM CYLINDER.....	4 in.	5 in.	6 in.	6 in.	7 in.	7 in.	8 in.	10 in.	12 in.	12 in.	14 in.	14 in.	16 in.	18 in.
Length of Stroke	9 in.	9 in.	9 in.	9 in.	12 in.	12 in.	12 in.	12 in.	12 in.	18 in.	24 in.	24 in.	24 in.	24 in.
Content, Gallons per Hour	850	1500	2160	2940	3840	4860	6000	8640	11590	15360	19440	24000	34650	49360
Price..... £	18	22	24	28	35	38	45	60	70	85	130	140	180	230

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ALL KINDS OF
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**FOREIGN MINING AND METALLURGY.**

The condition of the Belgian Coal Trade continues favourable. The summer is drawing to a close, and autumn is approaching; all descriptions of household coal are, accordingly, hardening in price upon the Belgian markets. Industrial coal does not follow exactly the same course, but it has maintained at the same time a firm tone. Stocks of coal have been much reduced in Belgium, and producers have maintained, accordingly, a firm attitude towards their clients. The demand for coal on the part of merchants who wish to lay in supplies of coal for the winter is becoming considerable, but colliery proprietors have not shown much inclination to enter into the winter contracts at present. The German coal trade has been well maintained, upon the whole, although some descriptions have exhibited a certain depression. Taking a general view of matters, it may be said that business has been readily carried through, that the extraction has been readily absorbed by consumers, and that the export movement has continued active. The imports of coal into Holland in 1882 amounted to 3,560,909 tons, as compared with 3,527,160 tons in 1881. The total of 3,560,909 tons, representing last year's imports, was made up as follows:—Belgium, 209,157 tons; England, 458,803 tons; and Germany, 2,892,949 tons.

The conventions concluded by the French Minister of Public Works with the six great French railway companies have begun to bring about practical results, so far as giving out numerous orders for railway plant are concerned. Notwithstanding this, however, the situation still remains unsatisfactory at Paris, where business in iron has continued to be done at 6l. 16s. per ton. In the Longwy group deliveries were important in July, amounting, as they did, to about 32,000 tons. Quotations have not changed in the Longwy district, white pig being held at 2l. 9s. 9d. per ton, and No. 3 casting pig at 3l. 2s. 6d. per ton. The orders recently given out for railway plant, to which reference has just been made, comprised 80,000 tons of rails; other affairs are also stated to be in course of negotiation. The situation has experienced scarcely any change in Germany. Pig has continued depressed, and iron has been only feebly maintained. Plates are in more demand, and prices have been fairly well supported, although at the same time no advance has been reported. The production of pig in the Zollverein in June is returned as follows:—Puddling pig, 172,918 tons; spiegel pig, 7677 tons; Bessemer pig, 44,091 tons; Thomas pig, 24,621 tons; and casting pig, 23,150 tons; making a total of 272,457 tons. The corresponding production in the first six months of this year is returned at 1,670,354 tons, as compared with 1,515,180 tons in the first half of 1882, showing an advance of 155,174 tons, or about 10 per cent. this year. The Bochum Steelworks and M. de Wendel have shared between them at Magdeburg a contract for 1600 tons of steel rails at 7l. 3s. 9d. per ton. At Erfurt [the Eschweiler house has taken a contract for 105 axles at 17l. 6s. per ton. Quotations have not generally varied upon the German market during the last few days.

No appreciable progress can be reported in the Belgian iron trade. The improvement in affairs continues, but it cannot be concluded from this that Belgian metallurgy is on the eve of a general revival in business, as a much more considerable increase in transactions must occur before a serious change for the better can be said to have taken place. All that can be at present reported is greater firmness in the quotations recently current. The number of small transactions concluded below the basis prices has diminished in proportion as work has become more general. English pig has been moderately well held; prices cannot be carried beyond 2l. 6s. 6d. per ton, and have remained a little below that level rather than otherwise; at the same time there has been rather more firmness in transactions. Belgian casting pig has been maintained, with some difficulty, at 2l. 18s. per ton at Charleroi. Luxembourg pig has continued to be maintained at 2l. 8s. per ton; but little business has been done upon these terms, and, in the case of any transactions of importance, some concessions would probably be made. Refining pig has been steadily maintained at 2l. 4s. per ton at Charleroi, while well-employed producers refused to assent to these terms, but demand higher rates. The Athus-Halanz group would probably be ready to do business at 2l. per ton in the case of transactions of some importance, without, at the same time, being desirous to engage themselves very far in advance. Iron has been weak upon the Belgian markets. Attempts have been made to re-establish a quotation of 5l. 4s. per ton; but, while this price has been supported by the great works, it has not been generally accepted by clients who are enabled to supply their wants at less important rolling-mills upon easier terms. If we report the average price at 5l. 2s. per ton we should probably not exaggerate one way or the other. The difference of 8 frs. per ton per number has been well maintained upon the old basis price of 5l. per ton. Girders have not been selling much below 5l. 4s. per ton. Plates have continued in no great demand; No. 2 have been offered at 6l. 16s. per ton, while No. 3 have sold readily at 7l. 12s. per ton.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

THE WHOLESALE MINERAL WATERS SUPPLY (Limited).—Capital 15,000*l.*, in shares of 5*l.*. To purchase businesses and carry on the manufacture of all kinds of mineral and aerated waters. The subscribers (who take one share each) are—E. P. Michell, 24, Poyning's-road; A. Summers, Canning Town; E. L. Coulton, 73, Warwick-street; H. J. Hind, Kentish Town; F. J. Vinall, 1, Adelaide-road; W. D. Barrett, Drury-lane; C. Reed, Crayford.

HAMPSON AND FISH (Limited).—Capital 75,000*l.*, in shares of 15*l.*. To take over and carry on an established business of cotton spinners, &c., situated at Preston and Manchester. The subscribers (who take one share each) are—R. H. Macauley, Cambridge; H. S. Cooke, 66, Lady Somerset-road; R. W. Smith, 48, Brighton-road; E. P. Cooke, Richmond; E. W. Clarke, Clapham; G. M. Hill, 4, Porteus-road; H. H. Phear, Croydon.

THE LIVERPOOL STANDARD INVESTMENT BUILDING AND ADVANCE COMPANY (Limited).—Capital 20,000*l.*, in shares of 1*l.*. The business of a property and advance company, including that of capitalists and financial agents. The subscribers are—J. Parry, Liverpool, 20; J. Linacre, Liverpool, 20; J. White, Liverpool, 20; A. Stoner, Liverpool, 20; W. V. Fitzgrove, Liverpool, 20; E. Lowry, Liverpool, 10; W. H. Wilson, Liverpool, 20.

THE PATRICROFT SPINNING COMPANY (Limited).—Capital 100,000*l.*, in shares of 100*l.*. To acquire a property situated at Barton, parish of Eccles, and to carry on the businesses of cotton spinners and manufacturers, dyers, bleachers, &c. The subscribers (who take one share each) are—E. S. Hargreaves, Partington; C. Wootenholme, Liverpool; A. J. Hargreaves, Eccles; J. K. Glazebrook, Manchester; J. Holland, Hooton; R. C. Maclaren, Ayr; J. S. Hargreaves, Brooklands.

THE LIDGETT COLLIERY COMPANY (Limited).—Capital 15,000*l.*, in shares of 50*l.*. To purchase the interests in said colliery, situated in the parish of Tankersley, county of York, and all buildings, works, engines, machinery, tools, and other effects belonging thereto, and taking from Earl Fitzwilliam a lease of the property, in order to carry on the business of coal and iron masters, quarrymen, brick-makers, &c. The subscribers (who take one share each) are—W. Clarke, Wentworth, M.D.; H. Walker, Sheffield, gentleman; T. Vickers, Cheetham, gentleman; J. Marshall, Sheffield, merchant; W. W. Matthewsman, Doncaster, colliery agent; G. B. Walker, Barnsley, M.E.; H. S. Walker, Barnsley, gentleman. The following are the first directors—W. Clarke, J. Marshall, W. W. Matthewsman, and G. B. Walker. Qualification 10 shares.

THE HOLWAY CONSOLS (Limited).—Capital 35,000*l.*, in shares of 1*l.*. Purchasing or otherwise acquiring lands and hereditaments, and rights of mining, quarrying, and searching for lead and other minerals and substances in and upon lands situated in the parishes of Holywell and Whitford, Flint, for the purpose of carrying on mining and quarrying operations. The purchase or other acquisition of stock, plant, machinery, fixtures, and all other appliances necessary in the company's business. The subscribers are—W. W. Mackeson, 1, New-square, solicitor, 150; J. H. Smith, Woolwich, Colonel R.E., 150; T. Gamble, East Acton, gentleman, 5; W. A. Nicholls, Stock Exchange, stockbroker, 5; E. J. Bartlett, 30, Great St. Helen's, stockdealer 150; J. C. Addison, Ealing, major, 150; R. Chandler, 66, Bishopsgate-street Within, solicitor, 1.

LONDON COMMERCIAL ASSURANCE COMPANY (Limited).—Capital 1,000,000*l.*, in shares of 20*l.*. To carry on at home and abroad a general insurance business. The subscribers (who take one share each) are—G. P. Brown, 62, Moorgate-street; J. H. Smellie, 85, Gracechurch-street; J. C. Morrow, 37, Walbrook; W. D. Childs, South Norwood; W. Armitage, Catford; E. Taylor, 52, Upper Kennington-lane; J. E. Clarke, Lombard House.

THE HODGSON PATENT LIFE-BOAT COMPANY (Limited).—Capital 30,000*l.*, in shares of 5*l.*. To construct life-boats and use certain patents in connection therewith. The subscribers (who take one share each) are—R. V. Hamilton, Lee; F. R. B. Lisberood, Reading; W. F. Dalrymple, 16, Jelwood-place; L. C. C. Currie, 22, Clarge's-street; C. M. Lyte, Colford; H. Lisher, 1, Princes-street; J. H. Stephens, 1, Princes-street.

CREWKERNE WATER SUPPLY COMPANY (Limited).—Capital 8000*l.*, in shares of 2*l.*. To carry on the usual operations of a water company in connection with said town and its neighbourhood. The subscribers are—G. F. Wills, Crewkerne, 100; W. Sparks, Crewkerne, 100; F. H. Hooke, Crewkerne, 100; J. Tompsett, Crewkerne, 50; G. Jebbs, Crewkerne, 100; G. Seado, Crewkerne, 20; J. Tilley, Crewkerne, 60.

THE HARDSHIN'S MINING COMPANY (Limited).—Capital 4200*l.*, in shares of 10*l.*. To purchase or otherwise acquire the leasehold lead mines, known as the Hardshin Mine, situated in the parish of Longwaton, county of Westmoreland, with the plant and machinery, &c. To manage, improve, develop, sell, and exchange, or otherwise dispose of any of the real or personal properties of the company. The subscribers are—T. B. Barker, Westoe, 400; C. F. Jackson, Newcastle-on-Tyne, 400; T. Sheldon, Corbridge, 400; W. Atkinson, Newcastle-on-Tyne, 400; W. Simpson, jun., Newcastle-on-Tyne, 50; J. Greenwell, Gaingill, 40; R. Duff, Haworth, 10.

ARCHIBALD KENRICK AND SONS (Limited).—Capital 300,000*l.*, in shares of 100*l.*. To acquire and carry on at Westbromwich an established business of ironfounders, machinists, fitters, pattern makers, &c. The subscribers (who take one share each) are—J. A. Kenrick, Egbaston; W. Kenrick, Harborne; G. H. Kenrick, Egbaston; F. Rylands, Edgbaston; T. Martineau, Edgbaston; H. Chamberlain, Edgbaston; G. Kenrick, Nottingham.

JOHN DRAKE AND CO. (Limited).—Capital 10,000*l.*, in shares of 10*l.*. To take over and continue a business of printers, publishers, booksellers, advertising agents, &c., situate in Sheffield. The subscribers (who take one share each) are—J. Drake, Sheffield; W. E. Maples, Sheffield; S. Foster, Sheffield; A. W. Drake, Sheffield; J. Bailey, Sheffield; F. Turner, Sheffield; A. Granger, Sheffield.

THE CLIFF SILVER MINES (Limited).—Capital 200,000*l.*, in shares of 5*l.*. To acquire mines and minerals, mining rights, or similar rights in Placentia, Island of Newfoundland, North America, or elsewhere. To work, win, and get any mines and minerals, and to wash, crush, reduce, amalgamate, and render merchantable, sell and dispose, or otherwise turn to profit any ores, precious stones, and mineral produce belonging to the company. The subscribers (who take two shares each) are—C. H. McEwen, 24, Pembroke-square, gentleman; R. Moss, 7, Westbourne Grove, gentleman; W. Duffitt, South Norwood, gentleman; W. H. T. Hawley, Twickenham, gentleman; F. Sandeman, 15, Hyde Park Gardens, gentleman; J. G. Nicoll, Stamford Hill, gentleman; E. W. Taylor, 61, Great Percy-street, gentleman. No Articles of Association have been registered.

THE SOUTH ROMAN GRAVELS COMPANY (Limited).—Capital 30,000*l.*, in shares of 1*l.*. The acquisition and working of any lands, mines, mining properties, or mining rights, machinery, plant, &c., belonging to the South Roman Gravels mining sett, and to carry on mining operations of all descriptions. The subscribers (who take one share each) are—T. H. Watson, Batley; T. C. Fawcett, Leeds; C. G. Brown, Leeds; R. H. Benson, Leeds; J. Peacock, Leeds; R. Meany, Leeds; F. W. Child, Leeds.

THE SEALYHAM SLATE COMPANY (Limited).—Capital 20,000*l.*, in shares of 5*l.*. To purchase or otherwise acquire, develop, and work, certain quarries situate in the parish of Dogwells, Pembrokeshire. The subscribers (who take one share each) are—A. S. Hamand, 9, Bridge-street; J. G. Powers, 41, Palace Chambers; H. D. Harris, Cafwydw; D. J. Meyler, Swansea; G. W. Meyler, Hendon; T. Lewis, Fishguard; W. Vaughan, Fishguard.

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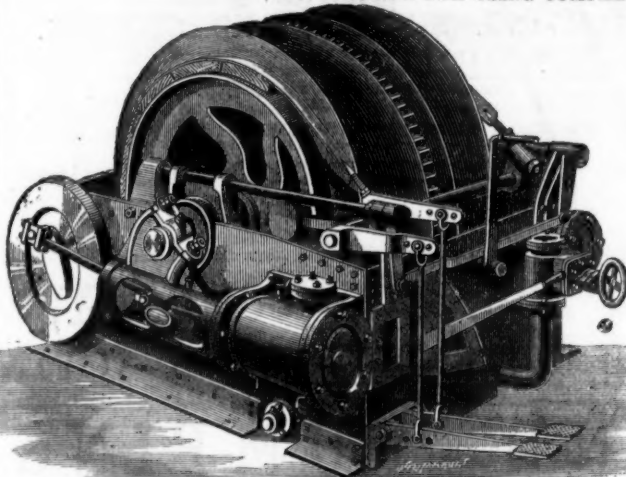
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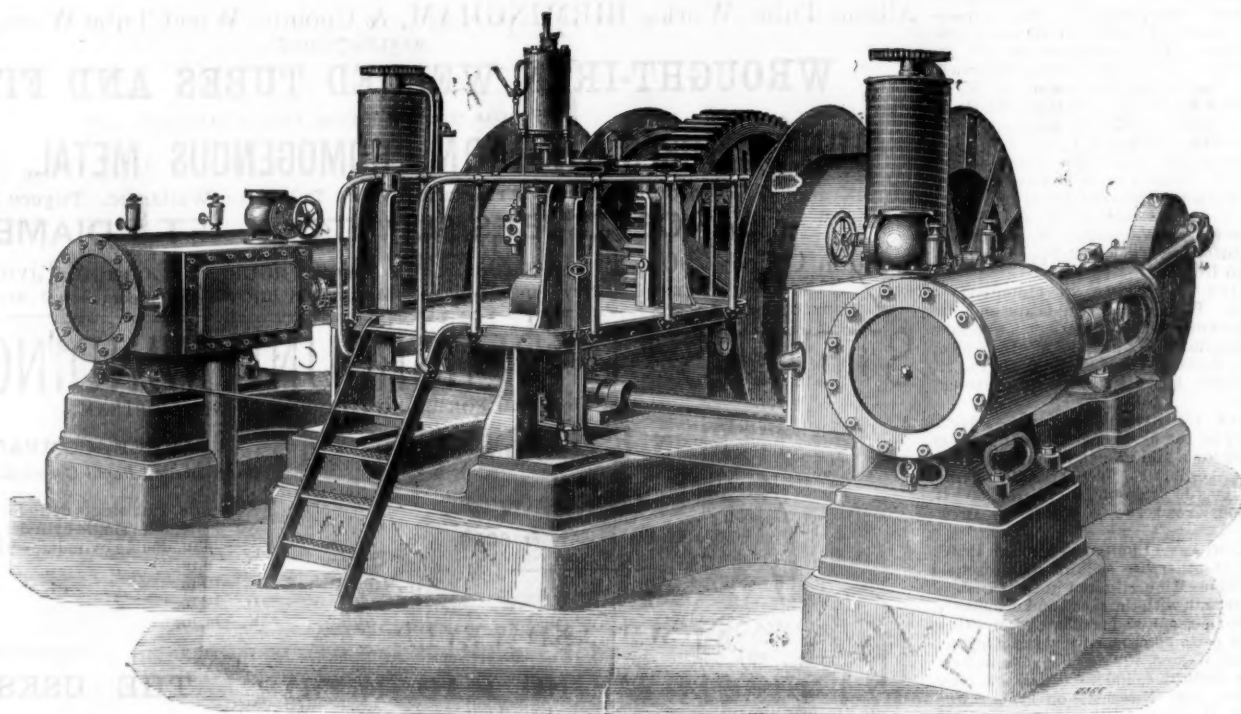
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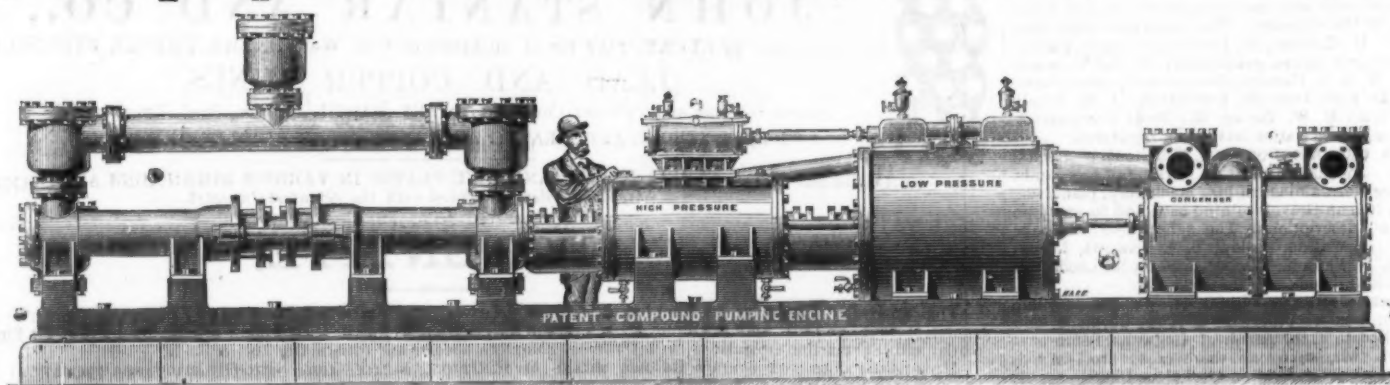
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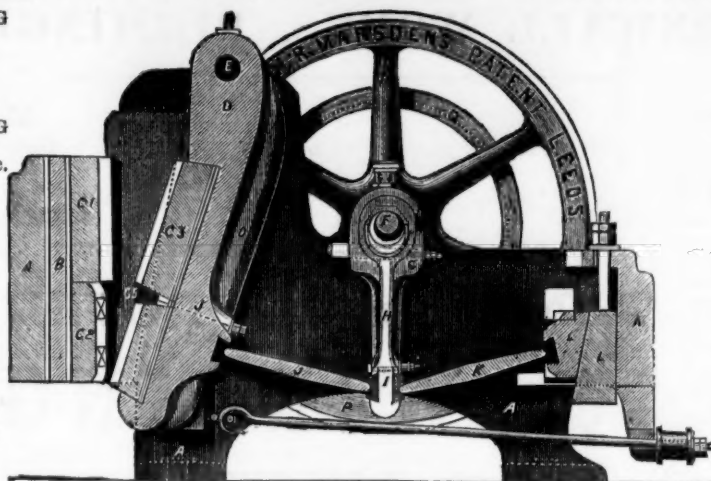
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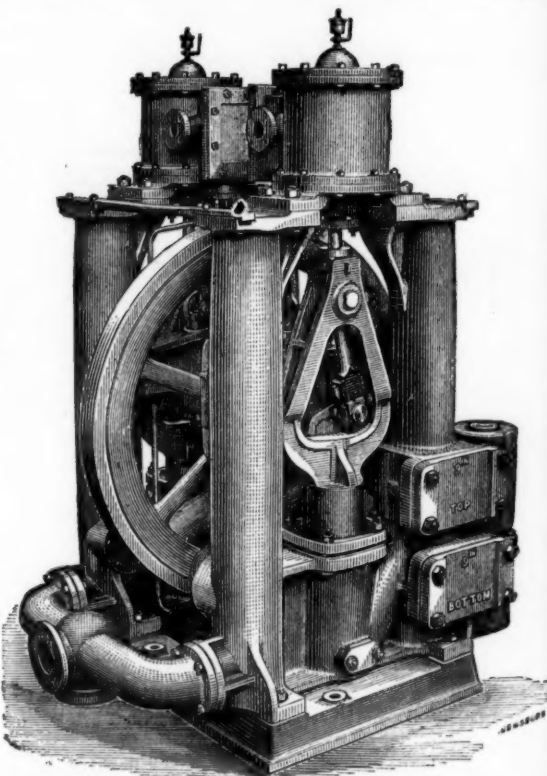
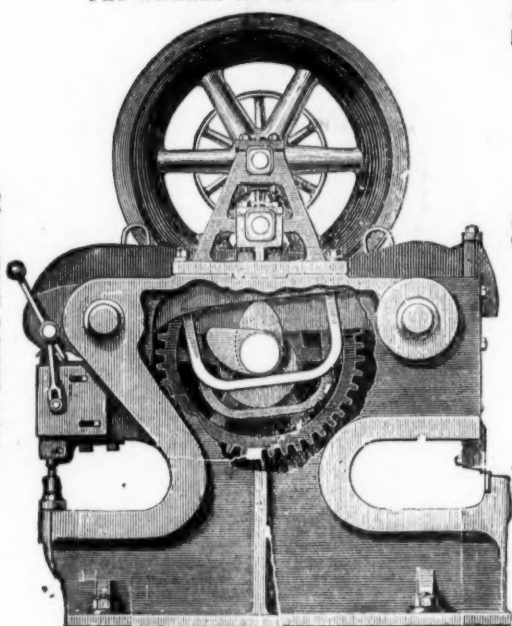
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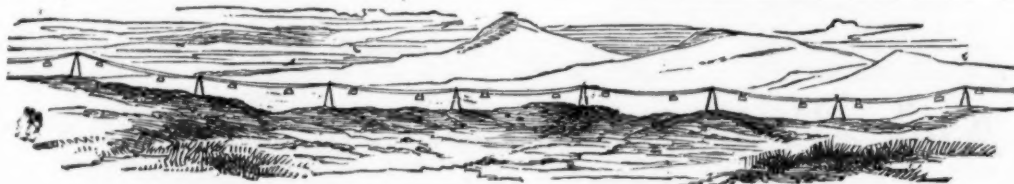
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